



STUDIES
OF
N A T U R E.

VOL. II.

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S. J. Smith.

STUDIES
OF
N A T U R E.

BY
JAMES - HENRY - BERNARDIN
DE SAINT - PIERRE.

.....MISERIS SUCCURERE DISCO.

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REPLIES TO THE OBJECTIONS AGAINST PROVIDENCE,
FOUNDED ON THE CALAMITIES OF THE
HUMAN RACE.

THE arguments deduced from the varieties of the Human Race, and from the evils accumulated by the hand of Nature, by Governments, and by Religions, on the head of Man, attempt to demonstrate, that men have neither the same origin, nor any natural superiority above the beasts; that their virtues are destitute of all prospect of reward, and that no Providence watches over their necessities, to supply them.

We shall enquire into those evils, one after another, beginning with such as are imputed to Nature; the necessity and utility of which we shall endeavour to make appear; and shall afterwards

VOL. II. B demonstrate,

demonstrate, that political evils are to be ascribed entirely to deviations from the law of Nature, and constitute, themselves, a proof of the existence of a Providence.

Our discussion of this interesting subject shall commence with a reply to the objections founded on the varieties of the human species. We pretend not to deny, that there are men black and white, copper-coloured, and pale. Some have a beard, others little, if any. But these pretended characters are accidents merely, as has been already shewn. Horses white, bay or black, with frizzled hair, as those of Tartary, or with sleek smooth hair, as those of Naples, are unquestionably animals of the same species. The *Albinos*, or white Negros, are a species of Lepers; and no more form a particular race of Negros, than persons with us who have been marked by the small-pox form a race of spotted Europeans.

Though it does not enter into my plan here to detail all the natural adaptations, which may be opposed to all the accusations of our wretched systems of Physics, and though I have reserved, in the prosecution of this undertaking, some Studies expressly devoted to this object, as far as my poor ability enables me, I shall, however, by the way, observe, that the black colour is a blessing of Providence

vidence to the inhabitants of tropical countries. White reflects the rays of the Sun, and black absorbs them. The first, accordingly, redoubles his heat, and the second weakens it. Experience demonstrates this in a thousand different ways. Nature has employed, among other means, the opposite effect of these colours, for multiplying, or weakening, on the Earth, the heat of the Orb of day. / The farther you advance toward the South, the blacker are men and animals; and the farther you proceed northward, the whiter is the colour of both the one and the other. Nay, when the Sun withdraws from the northern regions, many animals which were there, in Summer, of different colours, begin to whiten; such as squirrels, wolves, hares... and those of the southern regions, to which he is approaching, then clothe themselves with tints deeper and more absorbent. Such are, in the feathery race, the *widow*, the cardinal, &c. which exhibit much more powerful colouring, when the Sun approaches toward the Line, than when he is retiring from it. It is, therefore, by adaptations of climate, that Nature has made the inhabitants of the torrid Zone black, as she has whitened those of the icy Zones. She has given, besides, another preservative against the heat to the Negros who inhabit Africa, which is the hottest part of the Globe, principally by reason of that broad belt of sand which crosses it, and whose

utility

utility we have indicated. She has covered the head of those careless and unindustrious tribes, with a fleece more crisp than a tiffue of wool, which effectually shelters it from the burning heat of the Sun. They are so perfectly sensible of it's accommodation to this purpose, that they never employ a substitute head dress; and there is no description of Mankind among whom artificial coverings, as bonnets, turbans, hats, &c. are more rare, than among the Negros. They use such as are foreign to them, merely as objects of vanity and luxury, and I do not know of any one that is peculiar to their Nation. The inhabitants of the peninsula of India are as black as they; but their turbans communicate to the hair, which, but for their head dress, would, perhaps, be frizzled, the facility of growing and expanding.

The American tribes which inhabit under the Line, are not black, it must be admitted; they are simply copper-coloured. I ascribe this weakening of the black tint to several causes peculiar to their country. The first is, the universal practice of rubbing themselves over with *rou-on* (a kind of sweet-scented paste) which preserves the surface of their skin from the too vehement impression of the Sun. Secondly, they inhabit a country clothed with forests, and crossed by the greatest river in the World, which covers it with vapours. Thirdly, their

their territory rises insensibly from the shores of Brasil, up to the mountains of Peru; which, giving it a greater elevation in the Atmosphere, procures for it, likewise, a greater degree of coolness. Fourthly, in a word, the East-winds, which blow there incessantly, night and day, are always contributing to that coolness.

Finally, the colour of all those Nations is so much the effect of Climate, that the descendants of Europeans, settled there, assume the black tint after a lapse of some generations. This is evidently perceptible in India, in the posterity of the Moguls, tribes derived from the extremity of Asia, whose name signifies *whites*, and who are this day as black as the Nations which they have conquered.

Tallness of stature no more characterizes species, be the genus what it may, than difference of colour. A dwarf and a large apple-tree proceed from the same grafts. Nature, however, has rendered it invariable in the Human Species alone, because variety of magnitude would have destroyed, in the physical order, the proportions of Man with the universality of her productions, and because it would have involved, in the moral order, consequences still more dangerous, by subjecting,

beyond recovery, the smaller species of Mankind to the greater.

There are no races of dwarfs, nor of giants. Those which are exhibited at fairs, are little men contracted, or tall over-grown fellows, without proportion and without vigor. They re-produce not themselves either in miniature or magnitude, whatever pains may have been taken by certain Princes to procure a distinct propagation; among others, by the late King of Prussia, Frederic II. Besides, Do sufficient varieties of proportion of the Human Species issue from the hand of Nature to merit the distinctive appellation of dwarfs and giants? Is there between any two of them so great a difference, as between a little Sardinian poney and a huge Brabant horse; as between a spaniel, and one of the large Danish dogs which run before our coaches?

All nations have been from the beginning, and still are, with very little difference, and very few exceptions, of the same stature. I have seen Egyptian Mummies, and the bodies of the *Guanches* * of the Canary islands wrapped up in their

* GUANCHES, are the skeletons, covered with the skin, of the original inhabitants of the Canary Islands. The body of the Guancho

their skins. I have seen in Malta, in a tomb hewn out of the solid rock, the skeleton of a Carthaginian, all the bones of which were violet-coloured, and which had, perhaps, lain there from the days of Queen Dido. All these bodies were of the common size. Enlightened and sober-minded Travellers have reduced to a stature hardly exceeding our own, the pretended gigantic form of the Patagonians. I am aware that I have elsewhere alleged these same reasons; but it is impossible to repeat them too frequently, because they overturn, beyond the possibility of contradiction, the pre-

Guancho was deposited in a cavity adapted to its size, hewn out of the rock. The stone being of a porous nature, the animal juices were absorbed, or filtered through, and the solid parts, with their natural skinny mantle, became indurated, by a process of natural embalming, to such a degree as to resist the future assaults of time. They are still exhibited, by the natives of those islands, to strangers who visit them, with emotions of pride and veneration; as the images of their illustrious ancestors were ostentatiously displayed by the Patrician families of Rome. Avarice has, however, infected the Canaries, as well as more enlightened Islands; and families have been prevailed on to part with their *Guanches* to the Museums of European Collectors of Curiosities, for a little ready money, or in consideration of a large order of wines.

—Quid non mortalia pectora cogis,
Auri sacra fames!

in plain English, *The love of money will make a man sell his father.*

H. H.

tended influences of Climate, which are become the principles of our Physics, and, what is still worse, of our Morality.

There were formerly, we are told, real giants. The thing is possible; but this truth is become to us inconceivable, like all others of which Nature no longer furnishes any testimony. If Polyphemus, lofty as a tower, ever existed, every step they took in walking must, in moist soils, have sunk into the ground. How could their long and clumsy fingers have milked the little she-goats, reaped the corn, mowed down the grass, picked the fruits of the orchard? The greatest part of our aliments would escape their eyes as well as their hands.

On the other hand, had there been generations of pigmies, how could they have levelled the forests to make way for the cultivation of the earth? They would have lost themselves among the rushes. Every brook would have been to them a river, and every pebble a rock. The birds of prey would have carried them off in their talons, unless they made war upon their eggs, as *Homer* represents his pigmy race engaged in war with the eggs of cranes.

On

On either of these two suppositions, all the relations of natural order are burst asunder, and such discords necessarily involve the utter destruction of all social order. Suppose a nation of giants to exist possessed of our industry, and instigated by our ferocious passions. Let us place at the head of it, a *Tamerlane*, and see what would become of our fortifications and of our armies before their artillery, and their bayonets.

As much as Nature has affected variety in the species of Animals of the same genus, though they were to inhabit the same regions, and to subsist on the same aliments, so much has she studied uniformity in the production of the Human Species, notwithstanding the difference of Climates and of food. The accidental prolongation of the coccyx, in some human individuals, has been mistaken for a natural character, and a new species of men with tails, has been grafted on a principle so flimsy. Man may degrade himself to the level of the beast, by the indulgence of brutal appetite; but never was his noble form dishonoured by the tail, the forked feet, and the horns of the brute. In vain is the attempt made to trace an approximation of Man toward the class of mere animals, by insensible transitions.

Were

Were there any human race in animal forms, or any animal endowed with human reason, they would be publicly exhibited. We should have them in Europe, especially in times like these, when the whole Globe is pervaded and ransacked by so many enlightened Travellers ; and when, I do not say Princes, but puppet-players import alive into our fairs, the zebra so wild, the elephant so lumpish, tigers, lions, white bears, nay, up to crocodiles ; which have all been presented to public inspection in London.

Vain is the attempt to establish analogies between the human female, and the she-orang-outang, from the situation and configuration of the bosom, from the periodical sexual purgations, from the attitude, and even from a sort of modesty. Though the female orang-outang passes her life in the woods, *Allegrain*, surely, as has been observed, never could have modelled after her, his statue of Diana, which is shewn at Lucienne. There is a much greater difference still between the reason of Man and that of the beasts, than there is between their forms ; and that man's must have been strangely perverted, who could advance, as a celebrated Author has done, that there is a greater distance between the understanding of *Newton*, and that of such or such a man, than between the understanding

derstanding of this man and the instinct of an animal. As we have already said, the dullest of Mankind can learn the use of fire, and the practice of agriculture, of which the most intelligent of animals is absolutely incapable; but what I have not yet said, the simple use of fire, and the practice of agriculture, are far preferable to all *Newton's* discoveries.

Agriculture is the art of Nature, and fire her primary agent. From experience we are assured, that men have acquired by means of this element and of this art a plenitude of intelligence, of which all their other combinations, I venture to affirm, are merely consequences. Our Sciences and Arts are derived, for the greatest part, from these two sources, and they do not constitute a difference more real between the understanding of one man and another, than there is between the dress and furniture of Europeans and those of Savages. As they are perfectly adapted to the necessities of the one and of the other, they establish no real difference between the understandings which contrived them. The importance which we assign to our talents, proceeds not from their utility, but from our pride. We should take a material step toward its humiliation, did we consider that the animals which have no skill in agriculture, and know not the use of fire, attain to the greatest
part

part of the objects of our Arts and Sciences, and even surpass them.

I say nothing of those which build, which spin, which manufacture paper, cloth, hives, and practise a multitude of other trades, of which we do not so much as know. But the torpedo defended himself from his enemies by means of the electric shock, before Academies thought of making experiments in electricity; and the limpet understood the power of the pressure of the air, and attached itself to the rocks, by forming the vacuum with its pyramidal shell, long before the air-pump was set a going. The quails which annually take their departure from Europe, on their way to Africa, have such a perfect knowledge of the autumnal Equinox, that the day of their arrival in Malta, where they rest for twenty-four hours, is marked on the almanacks of the island, about the 22d of September, and varies every year as the Equinox. The swan and wild duck have an accurate knowledge of the Latitude where they ought to stop, when, every year they re-ascend, in Spring, to the extremities of the North, and can find out, without the help of compass or octant, the spot where the year before they made their nests. The frigate which flies from East to West, between the Tropics, over vast Oceans interrupted by no Land, and which regains at night, at the distance of
many

many hundred leagues, the rock hardly emerging out of the water which he left in the morning, possesses means of ascertaining his Longitude, hitherto unknown to our most ingenious Astronomers.

Man, it has been said, owes his intelligence to his hands: but the monkey, the declared enemy of all industry, has hands too. The sluggard, or sloth, likewise has hands, and they ought to have suggested to him the propriety of fortifying himself: of digging, at least, a retreat in the earth, for himself and for his posterity, exposed as they are to a thousand accidents, by the slowness of their progression. There are animals in abundance furnished with tools much more ingenious than hands, and which are not, for all that, a whit more intelligent. The gnat is furnished with a proboscis, which is at once an awl proper for piercing the flesh of animals, and a pump by which it sucks out their blood. This proboscis contains, besides, a long saw, with which it opens the small blood-vessels at the bottom of the wound which it has made. He is likewise provided with wings, to transport him wherever he pleases; a corset of eyes studded round his little head, to see all the objects about him in every direction; talons so sharp, that he can walk on polished glass in a perpendicular direction; feet supplied with brushes
for

for cleaning himself; a plume of feathers on his forehead; and an instrument answering the purpose of a trumpet to proclaim his triumphs. He is an inhabitant of the Air, the Earth, and the Water, where he is born in form of a worm, and where, before he expires, the eggs which are to produce a future generation are deposited.

With all these advantages, he frequently falls a prey to insects smaller, and of a much inferior organization. The ant which creeps only, and is furnished with no weapons except pincers, is formidable not to him only, but to animals of a much larger size, and even to quadrupeds. She knows what the united force of a multitude is capable of effecting; she forms republics; she lays up store of provisions; she builds subterraneous cities; she forms her attacks in regular military array; she advances in columns, and sometimes constrains Man himself, in hot countries, to surrender his habitation to her.

So far is the intelligence of any one animal from depending on the structure of it's limbs, that their perfection is frequently, on the contrary, in the inverse ratio of it's sagacity, and appears to be a kind compensation of Nature to make up a defect. To ascribe the intelligence of Man to his hands, is to deduce the cause from the means, and
talent

talent from the tool with which it works. It is just as if I were to say, that *Le Sueur* is indebted for the happy native graces of his pictures to a pencil of fable's hair ; and that *Virgil* owes all the harmony of his verses to a feather of the swan of Mantua.

It is still more extravagant to maintain, that human reason depends on Climate, because there are some shades of variety in manners and customs. The Turks cover their heads with turbans, and we cover ours with hats ; they wear long flowing robes, and we dress in coats with short skirts. In Portugal, says *Montagne*, they drink off the sediment of wines, we throw it away. Other examples, which I could quote, are of similar importance. To all this I answer, that we would act as these people, if we were in their country ; and that they would act as we do, were they in ours.

Turbans and flowing robes are adapted to hot countries, where the head and body stand in need of being cooled, by inclosing in the covering of both a greater mass of air. From this necessity has arisen the use of turbans among the Turks, the Persians, and Indians, of the mitres of the Arabians, of the bonnets like a sugar-loaf of the Chinese and Siamese, and that of wide and flowing robes, worn by most of the Nations of the South.

From

From a contrary necessity, the Nations of the North, as the Polanders, the Russians, the Tartars, wear furred caps and close garments. We are obliged to have, in our rainy Climates, three aqueducts upon our head, and garments shortened, because of the dirt. The Portuguese drink the sediment of wine ; and so would we do with the wines of Portugal ; for in sweet wines, as those of hot countries, the most fugary particles are at the bottom of the cask ; and in ours, which are sprightly, nothing is at the bottom but mere dregs, the best is uppermost. I have seen in Poland, where they drink great quantities of the wines of Hungary, the bottom of the bottle presented as a mark of preference. Thus the very varieties of national customs prove the consistency of human reason.

Climate has no greater influence in changing human morality, which is reason in perfection, I admit, at the same time, that extreme heat and cold produce an effect on the passions. I have even remarked, that the hottest days of Summer, and the coldest of Winter, were actually the seasons of the year when most crimes were committed. The dog-days, say the vulgar, is a season of calamity. I could say as much of the month of January. I believe it must have been in conformity to these observations, that ancient Legislators had

had established, for that critical period, festivals designed to dissipate the melancholy of Mankind, such as the feast of Saturn among the Romans, and the feast of Kings * among the Gauls. In each Nation the festival was adapted to the public taste; among the Romans, it presented the images of a republic; among our ancestors those of monarchy.

But I beg leave, likewise, to remark, that those seasons fertile in crimes, are the seasons, too, of the most splendid actions. This effervescence of season acts on our senses, like that of wine. It produces in us an extraordinary impulsion, but indifferently to good and to evil. Besides, Nature has implanted in our soul two powers, which ever balance each other in just proportion. When the physical sense, Love, debases us, the moral sentiment, Ambition, raises us up again. The equili-

* The *Feast of Kings*, I apprehend, is coeval with the Christian Era, and had it's origin in the star-directed visit of the Eastern Magi to Bethlehem of Judah, recorded in the beginning of the second chapter of the Gospel according to St. Matthew. We can hardly suppose the ancient Gauls so extremely attached to irregular and unsteady Monarchy, as to institute and celebrate annual feasts in honour of it. Whatever may be in this, modern Gauls can say of the political body, what the *Médecin malgré lui* of Moliere, says, respecting the natural body: *We have changed all that.*

H. H.]

brium necessary to the empire of Virtue still subsists, and it is never totally lost, except in persons with whom it has been destroyed by the habits of society, and more frequently still by those of education. In that case, the predominant passion, having no longer any counterpoise, assumes the command of all our faculties ; but this is the fault of society, which undergoes the punishment of it, and not that of Nature.

I remark, however, that these same seasons exert their influence on the passions of Man, by acting only on his moral, and not on his physical principle. Though this reflection has something of the air of paradox, I shall endeavour to support it by a very remarkable observation. If the heat of Climate could act on the human body, it assuredly would be when one is in his mother's womb : for it then acts on that of all animals, whose expansion it accelerates. Father *du Tertre*, in his excellent History of the Antilles, says, that in those islands, the period of gestation of all European animals is shorter than in temperate Climates ; and that the hen's eggs are not longer in hatching, than the seeds of the orange in bursting their shell, twenty-three days. Pliny had observed in Italy, that they hatch in nineteen days in Summer, and in twenty-five in Winter.

In

In every country, the temperature of Climate hastens, or retards, the expansion of all plants, and the gestation of all animals, the Human Race excepted: let this be carefully remarked. “In the “Antilles islands,” says Father *du Tertre*, “the “white women and the negresses go with child “nine months, as in France.” I have made the same remark in all the countries through which I have travelled, in the Isle of France, under the Tropic of Capricorn, and in the extremity of Russian Finland. This observation is of considerable importance. It demonstrates that the body of Man is not subjected, in this respect, to the same laws with other animals. It manifests a moral intention in Nature, to preserve an equilibrium in the population of Nations, which would have been deranged, had the pregnancy of the woman been of shorter duration in hot countries than in cold. This intention is farther manifested in the admirable proportion she maintains in the production of the two sexes, so nearly equal in number, and in the very difference which we find, of one country from another, between the number of males and females: for it is compensated from North to South, in such a manner, that if there be rather more women born to the South, there are rather more men born to the North; as if Nature meant to attract and to unite Nations, the most remote from each other, by intermarriages.

Climate has an influence on morality, but by no means determines it; and though this supposed determination may be considered, in many modern Books, as the fundamental basis of the Legislation of the Nations, there is no one philosophical opinion more completely refuted by historic testimony. "Liberty," say they, "has found her asylum in the lofty mountains; from the North it was that the haughty conquerors of the World issued forth. In the southern plains of Asia, on the contrary, reign despotism, slavery, and all the political and moral vices which may be traced up to the loss of liberty."

So then, we must go and regulate, by our barometers, and thermometers, the virtues and the happiness of Nations! There is no necessity to leave Europe, in order to find a multitude of monarchical mountains, such as those of Savoy, a part of the Alps, of the Apennines, and the whole of the Pyreneans. We shall see, on the contrary, many republics in plains, such as those of Holland, of Venice, of Poland, and even of England. Besides, each of those territories has, by turns, made trial of different sorts of government. Neither cold, nor ruggedness of soil, inspire men with the energy of liberty, and still less with the unjust ambition of encroaching on that of others. The peasants of Russia, of Poland, and of the cold mountains

tains of Bohemia, have been slaves for many ages past; whereas the Angrias, and the Marattahs, are free men and tyrants in the South of India. There are several republics on the northern coast of Africa, where it is excessively hot. The Turks, who have laid hold of the finest provinces of Europe, issued from the mild Climate of Asia. The timidity of the Siamese, and of most Asiatics, has been quoted; but it is to be imputed, in those Nations, to the multitude of their tyrants, rather than to the heat of their countries. The Macassars, who inhabit the island of Célèbes, situated almost under the Line, are possessed of a courage so intrepid, as the gallant Count *Forbin* relates, that a small number of them, armed with poniards only, put to flight the whole force under his command, at Bancoek, consisting of Siamese and French, though the former were very numerous, and the others armed with muskets and bayonets.

If from courage we make the transition to love, we shall find that Climate has no more a determining power over Man, in the one case than in the other. I might refer myself, for proof of the excesses of this passion, to the testimony of travellers, to ascertain which has the superiority, in this respect, the Nations of the South, or those of the North. In all countries love is a torrid Zone to

the heart of Man. I must observe, that these appropriations of Love to the Nations of the South, and of Courage, to the Nations of the North, have been imagined by our Philosophers, as effects of Climate, applicable only to foreign nations: for they unite these two qualities, as effects of the same temperament, in those of our heroes to whom they mean to pay their court. According to them, a Frenchman great in feats of love, is likewise great in feats of war; but this does not hold as to other Nations. An Asiatic, with his seraglio, is an effeminate coward; and a Russian, or any other soldier of the North, whose Courts give pensions, is a second Mars. But all these distinctions of temperament, founded on Climate, and so injurious to Mankind, vanish into air, before this simple question: Are the turtle-doves of Russia less amorous than those of Asia; and are the tigers of Asia less ferocious than the white bears of Nova Zembla?

Without going to seek among men objects of comparison and contrast, from difference of place, we shall find greater diversity in manners, in opinions, in habiliments, nay, in physiognomy, between an opera-actor and a capuchin-friar, than there is between a Swede and a Chinese. What a contrast is the talkative, flattering, deceitful Greek, so fondly attached to life, to the silent, stately, honest Turk, ever devoted to death! These men, so
very

very opposite, are born, however, in the same cities, breathe the same air, live on the same food. Their extraction, we shall be told, is not the same; for pride, among us, ascribes a mighty influence to the power of blood. But the greatest part of those Janissaries, so formidable to the cowardly Greeks, are frequently their own children, whom they are obliged to give in tribute, and who pass, by a regular process, into this first corps of the Ottoman soldiery. The courtesans of India so voluptuous, and it's penitents so austere, are they not of the same Nation, and, in many cases, of the same family?

I beg leave to ask, In what instance was an inclination to vice or virtue known to be communicated with the blood? *Pompey*, so noted for his generosity, was the son of *Strabo*, infamously notorious to the Roman people for his avarice. The cruel *Domitian* was brother to the gracious *Titus*. *Caligula* and *Agrippina*, the mother of *Nero*, were, indeed, brother and sister; but they were the children of *Germanicus*, the darling hope of Rome. The barbarous *Commodus* was son to the divine *Marcus Aurelius*. What a difference is frequently observable in the same man, between his youth and his mature age; between *Nero*, saluted as the Father of his Country, when he mounted the throne; and *Nero* execrated as it's avowed enemy

before his death : between *Titus*, stigmatized with the name of a second *Nero*, in his youth, and *Titus* at his death, embalmed with the tears of the Senate, of the Roman people, and of strangers ; and transmitted unanimously to posterity as the delight of mankind?

It is not Climate, then, which regulates the morality of Man ; it is opinion, it is education ; and such is their power, that they triumph not only over latitudes, but even over temperament. *Cesar*, so ambitious, so dissolute ; and *Cato*, so temperate and virtuous, were both of a sickly constitution. Place, Climate, Nation, Family, Temperament, no one of these, and in no part of the World, determine men to vice or to virtue. They are every where free to choose.

Before we take into consideration the evils which men bring upon themselves, let us attend to those which are inflicted by the hand of Nature. It is demanded, Why should beasts of prey exist ? They are absolutely necessary. But for them the Earth would be infested with cadaverous substances. There perishes, annually, of a natural death, the twentieth part, at least, of quadrupeds, the tenth part of fowls, and an infinite number of insects, most of the species of which live only one year.

year. Nay, there are insects whose life is contracted to a few hours, such as the ephemera.

As the rains convey all these spoils of the land to the rivers, and thence to the Seas, it is, accordingly, on their shores, that Nature has collected the animals which are destined to consume them. Most of the ferocious animals descend by night from the mountains, to hunt for their prey in this direction; there are even several classes created expressly for such situations; as the whole amphibious race; for example, the white bear, the otter, the crocodile. It is in hot countries especially, where the effects of corruption are most rapid and most dangerous, that Nature has multiplied carnivorous animals. Tribes of lions, tigers, leopards, panthers, civet cats, ounces, jackals, hyenas, condors, &c. resort thither, to re-inforce those of wolves, foxes, martens, otters, vultures, crows, &c. Legions of voracious crabs are nestled in their sands; the caimans and the crocodiles lie in ambush among their reeds; shell-fish, of innumerable species, armed with utensils fit for sucking, piercing, filing, bruising, roughen the face of the rocks, and pave the borders of their seas; clouds of sea-fowls hover, with a loud noise, over their shallows, or sail round and round, at the discretion of the waves, in quest of food; the lamprey, the becune, the carang, and the whole species

species of cartilaginous fishes, which live only on flesh, such as the hygien, the long shark, the broad thorn-back, the slipper, the polypus, armed with air-holes, and all the varieties of sea-dogs, swim there in crowds, constantly employed in devouring the wreck of bodies thrown upon the shore.

Nature calls in, besides, the insect legions to hasten forward their consumption. The wasps, furnished with scissars, cut asunder the fleshy parts; the flies pump out the fluids, the sea-worms cut in pieces the bones. These last on the southern coasts, and especially at the mouths of rivers, are in such prodigious quantities, and armed with augers so formidable, that they are capable of devouring a ship of war in less time than it cost to build her; and have thereby reduced the maritime Powers to the necessity of lately sheathing the bottoms of their squadrons with copper, as a security against their attacks.

The wrecks of all these bodies, after having served for food to the innumerable tribes of other fishes, some of which are provided with beaks formed like a spoon, and others like a pipe, for picking up the very crumbs of this vast table; reduced, at length, through such a series of digestions, into phlegms, into oils, into bitumens, and united to the pulps of vegetables, which descend
from

from all quarters into the Ocean, would re-produce in it's waters a new chaos of putrefaction, did not the currents convey their dissolution to volcanos, whose fires finish the process of decomposition, and give them back to the elements. For this reason it is, as has been already indicated, that volcanos are frequent only in hot countries ; that they are all situated in the vicinity of the Sea, or of great Lakes ; that they are disposed at the extremity of their currents ; and that they owe entirely to the purification of the waters, the sulphurs and the bitumens which administer a constant supply to their furnaces.

Animals of prey are by no means an object of terror to Man. First, because most of them roam abroad only in the night. They have prominent characters, which announce their approach even before it is possible to perceive them. Some favour strongly of musk, as the marten, the civet-cat, the crocodile ; others have shrill and piercing voices, which may be heard by night, at a great distance, as wolves and jackals ; others are distinguished by parti-coloured spots, or streaks, which are perceptible a great way off, on the yellow ground of their skin ; such are the dusky stripes of the tiger, and the dark spots of the leopard. All of them have eyes which sparkle in the dark. Nature has bestowed some of these common signatures

tures even on carnivorous and blood-sucking insects; such is the wasp, whose ground colour is yellow, furrounded with rings of black like the tiger, and the gnat, spotted with white upon a dark ground, who announces his approach by a loud buzzing. Even those which attack the human body are furnished with remarkable indications. They either smell strongly, as the bug; or present oppositions of colour to the places on which they fix, as white insects on the hair; or the blackness of the flea contrasted to the whiteness of the skin.

A great many Writers exclaim violently on the cruelty of ferocious animals, as if our cities were liable to be invaded by swarms of wolves, or, as if bands of lions, from Africa, were, from time to time, making incursions into our European colonies. They all shun the habitations of Man, and, as I said, most of them stir abroad only in the night. These distinctive characters are unanimously attested by Naturalists, Hunters, and Travellers. When I was at the Cape of Good-Hope, *M. de Tolback*, who was then Governor, informed me, that lions were formerly very common in the adjacent country; but that since the Dutch had formed a settlement there, you must travel fifty or sixty leagues up the country before one is to be seen.

After

After all, what is their ferocity to us? Even supposing we were not provided with arms, which they are incapable of resisting, and with a sagacity far superior to all their cunning, Nature has given us dogs able to combat, nay, to subdue them; and she has most admirably adapted their species to those of animals the most formidable. In the countries where lions are natives, there is likewise produced a breed of dogs capable of engaging them in single combat. I shall quote, after the ancient, but learned translation of *Dupinet*, what Pliny relates of a dog of this species, which was presented to Alexander, by a King of Albania*.

“ King Alexander first opposed to him a lion,
 “ which the dog presently tore in pieces. After
 “ that, he ordered to let loose an elephant, which
 “ afforded him the highest diversion that he ever
 “ had enjoyed. For the dog, bristling himself up
 “ from the first, began to wheel about, and snarl,
 “ at the elephant; then advanced to the attack,
 “ springing on this side and on that side, with all
 “ imaginable circumspection: now leaping up to
 “ assault, now couching to the right, to the left,
 “ which caused the elephant to turn and wind
 “ about so frequently, that he was, at last, com-
 “ pletely tired out, and fell down with a shock
 “ which made the ground tremble, on which the

* Pliny's Natural History, book viii. chap. xl.

“ dog sprung upon him, and dispatched him.” I can hardly think this dog could be of the same race with our lap-dogs.

The animals formidable to Man are more to be feared from their smallness than from their magnitude ; there is no one, however, but what may be rendered subservient to his benefit. Serpents, centipeds, scorpions; toads, inhabit scarcely any other than humid and unwholesome places, from which they keep us at a distance, more by their hideous figures than by their poisons. Such serpents as are really dangerous, give signals of their approach ; such are the rattles of the snake which bears that name. Few persons perish by their sting, and only from their own carelessness and imprudence. Besides, our pigs and poultry eat them currently, without suffering the slightest inconvenience. Ducks, in particular, devour them with avidity, as they likewise do most poisonous plants. Those of the kingdom of Pontus acquired so much virtue by aliments of such sorts, which are common there, that Mithridates employed their blood in his famous counter-poisons.

There are, it is admitted, noxious insects which prey upon our fruits, our corn, nay, our persons. But if snails, may-bugs, caterpillars, and locusts, ravage our plains, it is because we destroy the
birds

birds of our groves which live upon them; or, because, that on transporting the trees of foreign countries into our own, such as the great chestnut of India, the ebony, and others, we have transported with them the eggs of those insects which they nourish, without importing, likewise, the birds of the same climate which destroy them. Every country has those peculiar to itself, for the preservation of its plants. I have seen one, at the Cape of Good-Hope, called the gardener's bird, incessantly employed in catching the worms and caterpillars, which he stuck on the thorny prickles of the bushes. I have likewise seen, in the Isle of France, a species of starling called Martin, which comes from India, and which lives entirely on locusts, and on other insects which infest the cattle. If we were to naturalize these birds in Europe, no scientific discovery ever made would be so beneficial to Man.

But the birds of our own groves are still sufficient to clear our plains of noxious vermin, provided the bird-catchers were laid under a prohibition to entrap them, as they do, by whole coveys, in their nets, not to immure them in cages, but to make food of them: A fancy was adopted, some years ago, in Prussia, to exterminate the race of sparrows, as inimical to agriculture. Every peasant in the country was subjected to an annual
capitation

capitation tax of twelve heads of that kind of bird, which were employed in the manufacture of saltpetre, for in that country, nothing is suffered to go to waste. At the end of the second, or, at farthest, of the third year, it was discovered that insects had devoured their crops, and it was speedily found advisable to invite the sparrows from neighbouring countries, to re-people the kingdom with them. These birds, it is true, do eat some grains of corn, when the insects fail them; but these last, among others the weevil, consume the grain by bushels, nay, by granaries. If, however, it were possible to extinguish the whole race of insects, it would be the height of imprudence to set about it; for we should destroy, along with them, most of the feathered tribes of our plains, which have no other food for their young while in the nest.

As to the animals which fall upon our corn in the granary, and our woollens in the warehouse, such as rats, mice, mites, moths; I find that the former are useful in purifying the earth from human excrement, which constitutes a considerable part of their food. Besides, Nature has made Man a present of the cat, to clear the interior of his habitation from those vermin. She has endowed this animal not only with uncommon agility, and with wonderful patience and sagacity, but also with a spirit of domesticity perfectly adapted to her employment.

ployment. The cat attaches herself solely to the house. If the master removes, she returns alone at night to her old habitation. She differs essentially in this from the dog, who attaches himself solely to the person of his master. The cat has the affection of a courtier, and the dog that of a friend; the former adheres to the possession, and the latter to the man.

The weevil and the moth, sometimes, commit, it is true, great depredations among our grain and our woollens. Some Writers have told us, that the common hen is sufficient to clear the granaries of them: possibly it may be so. We have, besides, the spider and the swallow, which destroy them at the season when they take wing. I shall here consider only their political utility. On looking into those prodigious magazines where monopolizers hoard up the provision and clothing of a whole province, are we not bound to bless the Hand that created the insect which obliges them to bring these necessary commodities to market? Were grain as incorruptible as gold and silver, it would soon become as scarce. See under how many locks and doors these metals are secured. The commonalty would, at length, be completely deprived of their subsistence, if it were as little susceptible of change as that which is the representative of it. The mite and the moth first lay the

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miser under the necessity of employing a good many hands in stirring about and sifting his grain, till they force him at last to dispose of it altogether. How many poor wretches would go naked, if the moth did not devour the wardrobes and warehouses of the rich ! What is most wonderful here, is, that the articles which minister to luxury are not liable to perish by insects, as those which are subservient to the most pressing wants of human life. It is possible to preserve, without any diminution of value, coffee, silk, and cottons, even for ages ; but in India, where these commodities are real necessities of life, there are insects which quickly corrode them, particularly cotton.

The insects which attack the human body equally oblige the rich to employ those who have nothing, as domestics, to keep up cleanliness around them. The Incas of Peru exacted even this tribute of the poor ; for in all countries these insects attach themselves to Man, though it may have been said, that they did not pass the line. Besides these insects are rather teizing than noxious : they draw off the bad blood. As they immoderately increase only in great heats, they invite us to have recourse to bathing, which is so wholesome, and yet so much neglected among us, because being expensive, it is become an object of luxury.

After

After all, Nature has placed other insects near us, which destroy them; these are the spiders*. I have heard of an old officer, who being very much incommoded with bugs, at the Hospital of the Invalids, permitted the spiders to multiply round his bed, and thereby got the better of that nauseous vermin. This remedy, I am aware, will appear to many persons worse than the disease. But I believe it possible to find others more agreeable, in perfumes and oily essences; at least, I have remarked, that the odour of various kinds of aro-

* I presume that it is a particular species of spider: for I am persuaded that there are as many species of these as there are of insects to be destroyed. They do not all expand nets; some catch their prey fairly in the chace; others succeed by lying in ambuscade. I have seen one in Malta of a very singular character, and which is to be found in every house of that island. Nature has bestowed on this species of spider the resemblance of a fly, in the head and fore part of the body. When she perceives a fly on the wall, she makes her first approaches in great haste, taking care always to maintain the higher station. When she has got within five or six inches of her object, she advances very slowly, presenting to it a treacherous resemblance; and when she has got within the distance of two or three inches, she makes a sudden spring on her prey. This violent leap, made on a perpendicular plane, must surely precipitate her to the ground. No such thing. You find her again still on the wall, whether she has made good her blow or missed it; for previously to this great effort, she had affixed a cord a-top, by which to warp herself up again. Cartesian Philosophers, will you pretend, after this, to persist in maintaining that animals are merely machines!

matic plants puts to flight those abominable animals.

As to other calamities of Nature's inflicting, Man feels their pressure only because he deviates from her laws. If storms sometimes ravage his orchards and his corn fields, it is because he frequently places them where Nature never intended they should grow. Storms scarcely ever injure any culture except the injudicious cultivation of Man. Forests and natural meadows never suffer in the slightest degree. Besides, they have their utility. Thunder-storms purify and cool the air. The hail, with which they are sometimes accompanied, destroys great quantities of hurtful insects; and hails are frequent only at the season when such insects hatch and multiply; in Spring, and Summer. But for the hurricanes of the torrid Zone, the ants and locusts would render the islands situated between the Tropics totally uninhabitable.

I have already pointed out the utility, the absolute necessity of the volcanos, whose fires purify the waters of the Sea, as those of the thunder purify the air. Earthquakes proceed from the same cause. Besides, Nature communicates previous notice of their effects, and of the places where their focuses are situated. The inhabitants of Lisbon know well that their city has been several
times

times shattered by shocks of this kind, and that it is imprudent to build in stone. To persons who can submit to live in a house of wood, they have nothing formidable. Naples and Portici are perfectly acquainted with the fate of Herculaneum. After all, earthquakes are not universal; they are local and periodical. Pliny has observed that the Gauls were not subject to visitations of this kind; but there are many other countries which know of them only by report. They are scarcely ever felt except in the vicinity of volcanos, on the shores of the Sea, or of great Lakes, and only at certain particular portions of the shore.

As to the epidemical maladies of the Human Race, and the diseases of animals, they are, in general, to be imputed to corrupted waters. Physicians, who have investigated their causes, ascribe them sometimes to the corruption of the air, sometimes to the mildew of plants, sometimes to fogs: but all these causes are simply effects of the corruption of the waters, from which arise putrid exhalations that infect the air, and vegetables, and animals. This may be charged, in almost every instance, on the injudicious labours of Man. The most unwholesome regions of the Earth, as far as I am at present able to recollect, are in Asia, on the banks of the Ganges, from which proceed, every year, putrid fevers, that, in 1771, cost Bengal the

life of more than a million of men. They have for their focus the rice plantations, which are artificial morasses, formed along the Ganges, for the culture of that grain. After the crop is reaped, the roots and stalks of the plant left on the ground, rot, and are transformed into infectious puddles, from which pestilential vapours are exhaled. It is in the view of preventing these pernicious consequences, that the culture of this plant has been expressly prohibited in many parts of Europe, especially in Russia, round Otschakof, where it was formerly produced in great quantities.

In Africa, the air of the island of Madagascar is corrupted, and from the same cause, during six months of the year, and will ever present an invincible obstacle to any European settlement upon it. All the French colonies which have been planted there, perished one after another, from the putridity of the air; and I myself must, with the rest, have fallen a victim to it, had not Divine Providence, by means of which I could have no foresight, prevented my intended expedition, and residence in that part of the world.

It is from the ancient miry canals of Egypt, that the leprosy and the pestilence are perpetually issuing forth. In Europe, the ancient salt-marshes of Brouage, which the water of the Sea no longer reaches,

reaches, and in which the rain-waters stagnate, because they are confined by the dikes and ditches of the old salt-pits, are become constant sources of distemper among the cattle. Similar diseases, putrid and bilious fevers, and the land-scurvy, annually issue from the canals of Holland, which putrify, in Summer, to such a degree, that I have seen, in Amsterdam, the canals covered with dead fishes; and it was impossible to cross certain streets, without obstructing the passages of the mouth and nose with your handkerchief. They have, indeed, forced a kind of current to the stagnant waters by means of wind-mills, which pump them up, and throw them over the dikes, in places where the canals are lower than the level of the Sea; but these machines are still far too few in number.

The bad air of Rome, in Summer, proceeds from its ancient aqueducts, the waters of which are diffused among the ruins, or which have inundated the plains, the levels whereof have been interrupted by the magnificent labours of the ancient Romans. The purple fever, the dysentery, the small-pox, so common all over our plains, after the heats of Summer, or in warm and humid springs, proceed, for the most part, from the puddles of the peasantry, in which leaves and the refuse of plants putrify. Many of our city-distem-

pers issue from the laystalls which surround them, and from the cimeteries about our churches ; and which penetrate into the very sanctuary.

I do not believe there would have been a single unwholesome spot on the Earth, if men had not put their hands to it. The malignity of the air of St. Domingo has been quoted, that of Martinico, of Porto-Bello, and of several districts of America, as a natural effect of Climate. But these places have been inhabited by Savages, who, from time immemorial, have busied themselves in diverting the course of rivers, and choking up rivulets. These labours constitute even an essential part of their defence. They imitate the beavers in the fortification of their villages, by inundating the adjacent country. Provident Nature, however, has placed those animals only in cold Latitudes, where, in imitation of herself, they form lakes which soften the air ; and she has introduced running waters into hot Latitudes, because lakes would there speedily change, by evaporation, into putrid marshes. The lakes which she has scooped out in such Latitudes, are all situated among mountains, at the sources of rivers, and in a cool Atmosphere. I am the more induced to impute to the Savages the corruption of the air, so murderous in some of the Antilles, that all the islands which have been found uninhabited were exceedingly

ingly wholesome; such as the Isle of France, of Bourbon, of St. Helena, and others.

As the corruption of the air is a subject peculiarly interesting, I shall venture to suggest, by the way, some simple methods of remedying it. The first is, to remove the causes of it, by substituting, in place of the stagnant puddles with which our plains abound, the use of cisterns, the waters of which are so salubrious, when they are judiciously constructed. They are universally employed all over Asia. Care should, likewise, be taken to prevent the throwing the bodies, and other offal, of dead animals into the laystalls of our cities; they ought to be carried to the rivers, which will be thereby rendered more productive of fish. In the case of Cities which are not washed by rivers to carry off the garbage, or if this method is found otherwise inconvenient, attention should be paid, at least, to placing the laystalls only to the North and North-east of such cities, in order to escape, especially during Summer, the fetid gusts which pass over them from the South and South-west.

The second is, to abstain from digging canals. We are well acquainted with the maladies which have resulted from those of Egypt, in the vicinity of Rome, and elsewhere, when care is not taken to keep them in repair. Besides, the benefits derived

rived from them are very problematical. To look at the medals which have been struck in our own country, on occasion of the canal of Briare, would we not be induced to think that the Strait of Gibraltar was henceforth to become superfluous to the navigation of France? Granting it to have been of some little utility to the interior commerce of the country, has the mischief done to the plains through which it passes been taken into the account, as a counterbalance? So many brooks and springs diverted from their course, and collected from every quarter, to be gulped up in one great navigable canal, must have ceased to water a very considerable extent of land. And can that be considered as a great commercial benefit, which is injurious to agriculture? Canals are adapted only to marshy places.

This is the third method of contributing to the restoration of the salubrity of the air. The attempts made in France to dry the marshes, have always cost us a great many men, and frequently, for that very reason, have been left incomplete. I can discover no other cause for this but the precipitancy with which such works are undertaken, and the multiplicity of the objects which they are intended to embrace. The Engineer presents his plan, the Undertaker gives in his estimate, the Minister approves, the Prince finds the money, the
Intendant

Intendant of the province provides the labourers ; all things concur to the effect proposed, except Nature. From the bosom of rotten earth arise putrid emanations, which presently scatter death among the workmen.

As a remedy to these inconveniencies, I beg leave to throw out some observations, which I believe to be well-founded. A piece of land entirely covered with water is never unwholesome. It becomes so, only when the water which covers it evaporates, and exposes to the air the muds of it's bottom and sides. The putridity of a morass might be remedied as effectually by transforming it into a lake, as into solid ground. It's situation must determine whether of these two objects is to be preferred. If it is in a bottom, without declivity, and without efflux, the indication of Nature ought to be followed up, and the whole covered with water. If there is not enough to form a complete inundation, it might be cut into deep ditches, and the stuff dug out thrown on the adjoining lands. Thus we should have, at once, canals always full of water, and little isles both fertile and wholesome. As to the season proper for such labours, the Spring and Autumn ought to be preferred ; and great care must be taken to place the labourers with their faces to windward, and to supply, by means of machinery, the necessity, to which they
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are frequently subjected, of plunging into mires and muds, to clear them away.

It has always appeared to me strangely unaccountable, that in France, where there are such numerous and such judicious establishments, we should have ministers of superintendence for foreign affairs, for war, the marine, finance, commerce, manufactures, the clergy, public buildings, horsemanship, and so on, but never one for agriculture. It proceeds, I am afraid, from the contempt in which the peasantry are there held. All men, however, are sureties for each other; and, independently of the uniform stature and configuration of the Human Race, I would exact no other proof that all spring from one and the same original. It is from the puddle, by the side of the poor man's hovel, which has been robbed of the little brook, whose stream sweetened it, that the epidemic plague shall issue forth to devour the lordly inhabitants of the neighbouring castle.

Egypt avenges herself, by the pestilence arising out of her canals, of the oppression of the Turks, who prevent her inhabitants from keeping them in repair. America, sinking under the accumulated strokes of Europeans, exhales from her bosom a thousand maladies fatal to Europe, and drags down with her the haughty Spaniard expiring on
her

her ruins. Thus the Centaur left, with Deïnira, his robe empoisoned with the blood of the Hydra, as a present which should prove fatal to his conqueror. Thus the miseries which oppress Mankind, pass from huts to palaces, from the Line to the Poles, from Ages past to Ages yet to come ; and their long and lingering effects are a fearful voice crying in the ears of the Potentates of the Earth : “ Learn to be just, and not to oppress the miserable.”

Not only the elements, but reason itself, corrupts in the haunts of wretchedness. What torrents of error, fear, superstition, discord, have broken out in the lower regions of Society, and swelled to the terror and the subversion of Thrones ! The more that men are oppressed, the more miserable are their oppressors, and the more feeble is the Nation which they compose. For the force which tyrants employ to support their authority at home, is never exercised but at the expence of that which they might employ, to maintain their respectability abroad.

First, from the haunts of misery issue forth prostitutions, thefts, murders, conflagrations, highway-robberies, revolts, and a multitude of physical evils besides, which, in all countries, are the plagues that tyranny produces. But those of opinion are
much

much more terrible. One man is bent on subjugating another, not so much for the sake of getting hold of his property, as to command his admiration, his reverence. Ambition proposes to itself no boundary short of this. To whatever condition he may be elevated, and however low his rival reduced; let him have at his mercy the fortune, the labour, the wife, the person, of his adversary, he has gained no point, unless he has gained his homage. It availed Haman nothing to have the life, the goods, of the Jews, at his disposal: he must see Mordecai prostrated at his feet. Oppressors are thus the oppressed, and become the arbiters of their own happiness; and the oppressed, for the most part, paying them back injustice for injustice, disturb them with false reports, religious terrors, dark surmises, calumnies, which engender among them, suspicions, apprehensions, jealousies, feuds, law-suits, duels; and, at last, civil wars, which issue in their total destruction.

Let us examine, in the case of some ancient and modern Governments, this re-action of evils upon each other, and we shall find it's extent to be in proportion to the ills which they bring upon Mankind. On contemplating this tremendous balance, we shall be constrained to acknowledge the existence of Sovereign Justice.

Without

Without paying regard to the common division of Governments *, into Democracy, Aristocracy, and Monarchy, which are only, at bottom, political

* Politicians, in classing Governments according to these exterior resemblances in form, have acted precisely as those Botanists do, who comprehend in the same category, plants which have similar flowers or leaves, without paying any attention to their virtues. The Botanist classes together the oak and the pimpernel ; and the Politician the Roman Republic and that of St. Marino. This is not the way of observing Nature : she is throughout nothing but adaptation and harmony. Her spirit, not her forms, is the great thing which we ought to study.

If in the History of any People you do not attend to it's moral and internal constitution, which scarcely any Historian keeps steadily in view, it will be impossible to conceive how Republics, apparently well constituted, have suddenly sunk into ruin : how others, on the contrary, in which nothing but agitation appeared, became formidable : whence arise the duration and the power of Despotic States, so much decried by modern Authors : and, finally, how it came to pass, that, after the glorious reigns of *Marcus Aurelius* and of *Antoninus*, which have been so highly extolled, the Roman Empire finished its progress to dissolution. It was, I am bold enough to affirm, because those good Princes thought only of preserving the exterior form of the Government. All was tranquillity around them ; the form of a Senate remained ; Rome was well supplied with corn ; the garrisons in the provinces were regularly paid. There was no sedition, no disturbance, every thing to appearance went on well. But during this lethargy, the rich were going on in an unbounded accumulation of property, and the people were losing the little that they had. The great offices of the State were engrossed by the same families. In order to have the means of subsistence, it was necessary

political forms that determine nothing, as to either their happiness, or their power, we shall insist only on their moral constitution.

Every Government, of whatever description, is internally happy, and respectable abroad, when it bestows on all it's subjects their natural right of acquiring fortune and honours: and the contrary

cessary for the commonalty to attach themselves to the Great. Rome contained a populace of mere menials. The love of Country was extinguished. The wretched did not know of what to complain. No one did them any wrong. All was orderly; but this very order precluded the possibility of their ever coming to any thing. They did not cut the throats of the citizens, as in the days of *Marius* and *Sylla*, but they stifled them.

In all human Society, there are two powers, the one temporal, and the other spiritual. You find them in all the Governments of the World, in Europe, in Asia, in Africa, and in America. The Human Race is governed in the same way as the human body. Such is the will of the AUTHOR of Nature, in order to the preservation and happiness of Mankind. When Nations are oppressed by the spiritual power, they resort for protection to the temporal; when this last oppresses, in it's turn, they have recourse to the other.* When both these concur to render them miserable, then arise heresies in swarms, schisms, civil wars, and a multitude of secondary powers, which balance the abuses of the two first, till there results, at length, a general apathy, and the State falls into destruction. We shall presently go into a thorough investigation of this interesting subject, when we come to speak of France. We shall find that, though there is but one which governs, of right, there are five powers which govern, in fact.

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takes place, when it reserves to a particular class of citizens, the benefits which ought to be common to all. It is not sufficient to prescribe limits to the People, and to restrain them within these by terrifying phantoms. They quickly force the person who puts them in motion, to tremble more than themselves. When human policy locks the chain round the ankle of a slave, Divine Justice rivets the other end round the neck of the tyrant.

Few Republics have been more judiciously constituted than that of Lacedæmon. Virtue and happiness were seen to flourish there, during a period of five hundred years. Notwithstanding the mediocrity of it's extent, it gave law to Greece, and to the northern coasts of Asia ; but as Lycurgus had not comprehended in his plan either the Nations which Sparta was to subdue, or even the Helots, who laboured the ground for her, by them were introduced the commotions which shattered her constitution, and at length totally subverted it.

In the Roman Republic there subsisted greater equality, and proportionally more power and happiness. She was, indeed, divided into Patricians and Plebeians; but as these last were capable of attaining the highest military dignities, as they

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possessed, besides, an exclusive title to the tribunitial office, the power of which equalled, nay, surpassed, that of the Consuls, the most perfect harmony existed between the two orders. It is impossible to observe, without emotion, the deference and respect paid by the Plebeians to the Patricians, during the most glorious periods of the Republic. They selected their patrons from among that order; they attended them in crowds on their way to the Senate: when they happened to be poor, they assisted themselves, to make up a marriage portion for their daughters. The Patricians, on the other hand, took an interest in all the affairs of the Plebeians; they pleaded their causes in the Senate; permitted them to bear their names; adopted them into their families, and gave them their daughters in marriage, when they distinguished themselves by their virtues. These alliances with Plebeian families were not disdained even by Emperors. *Augustus* gave his only daughter, *Julia*, in marriage to the Plebeian *Agrippa*. Virtue sat enthroned at Rome; and no where else upon Earth were altars raised more worthy of her. A judgment of this may be formed from the rewards assigned to illustrious actions. A criminal was condemned to be starved to death in prison; his daughter is allowed permission to visit him there, and keeps him alive by the milk from her own breast. The Senate, informed of this instance
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of filial tendernefs, voted a pardon to the father, in confideration of the daughter, and on the fpot where the prifon flood, commanded to rear a Temple facred to filial piety.

If a perfon condemned, was carrying to execution, the fentence was remitted, if a veftal happened to pafs that way. The punifhment, due to criminality, difappeared in the prefence of virtue. If, in battle, one Roman faved another out of the hands of the enemy, he became entitled to the civic crown. This crown confifted only of oak leaves, nay, it was the only military crown which had nothing golden about it, but it conferred the right of fitting, in the public theatres, on the bench adjoining to thofe which were allotted to Senators, who all flood up in deference, on the entrance of him who wore it. It was, fays Pliny, the moft illuftrious of all crowns, and communicated higher privileges than the mural, the obfidional, and naval crowns, becaufe there is more glory in faving a fingle citizen, than in taking cities, or in gaining battles. It was the fame, for this reafon, whether the perfon faved was the commander in chief, or a private foldier; but it was not to be earned by delivering an allied King, who might have come to the affiftance of the Romans. Rome, in the diftribution of rewards, diftinguifhed only the citizen. By means of fuch patriotic fen-

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timents, she conquered the Earth ; but she was just only to her own people ; it was by her injustice to other men, that she became weak and unhappy. Her conquests filled her with slaves, who, under *Spartacus*, brought her to the brink of destruction, and which decided her fate at last by the arms of corruption, much more formidable than those of war. By the vices and the flatteries of the Grecian and Asiatic slaves at Rome, were formed within her bosom the *Catilines*, the *Cæsars*, the *Neros* ; and while their voice was corrupting the masters of the World, that of the Goths, the Cimbri, the Teutones, the Gauls, the Allobroges, the Vandals, the companions of their lot, was inviting their compatriots from the North and from the East, who at length levelled the glory of Rome with the dust.

Modern Governments exhibit a similar re-action of equity and felicity, of injustice and misfortune. In Holland, where the People may aspire to every thing, abundance pervades the whole States, good order prevails in the cities, fidelity in wedlock, tranquility in all minds ; disputes and law-suits are rare in that country, because every one is content. Few European Nations possess a territory so contracted, and no one has extended her power so far : her riches are immense : she maintained singly successful war against Spain

Spain in all it's splendor, and afterwards against France and England united : her commerce extends over the whole Globe : she possesses powerful colonies in America, thriving settlements in Africa, formidable kingdoms in Asia. But if we trace up to their source the calamities and the wars with which she has been visited for two centuries, it will be found that they proceed from the injustice of some of her settlements in those countries. Her happiness and her power are not to be attributed to her republican form of Government, but to that community of benefits, which she presents indiscriminately to all her subjects, and which produces the same effects in despotic Governments, of which we have had representations so frightful.

Among the Turks, as among the Dutch, there is no such thing as quarrelling, or calumniating, or stealing, or prostitution, in the cities. Nay, there is not to be found, perhaps, over the whole Empire, a single Turkish woman carrying on the trade of a courtesan. There is, in the general mind, neither restlessness nor jealousy. Every man sees, without envy, in his superiors, a felicity attainable by himself, and he is at all times ready to lay down his life for the Religion and Government of his Country. Their force abroad is by no means inferior to the perfection of their union at home. With whatever contempt our Historians

may expose their ignorance and stupidity, they have actually made themselves masters of the finest provinces of Asia, of Africa, of Europe, nay, of the Empire of the Greeks themselves, with all their wit and learning, because the sentiment of patriotism which unites them, is sufficient to baffle all the talents and all the tactics in the world. They have undergone, however, frequent convulsions from the revolting of the conquered Nations; but the most dangerous proceed from their feeblest adversaries, from those very Greeks, whose property they plunder with impunity, and whose children they annually carry off, as a tribute to recruit the Seraglio. From these same children issue, by a re-acting Providence, most of the Janizaries, the Agas, the Pachas, the Bashaws, the Viziers, which oppress the Turks, in their turn, and render themselves formidable even to their Sultans.

It is this same community of hopes and of fortunes presented, without distinction, to all conditions of men, which has given so much energy to Prussia, whose internal police, and victories abroad, have been so highly celebrated by our political Writers; though it's Government is still more despotic than that of Turkey; for the Prince there is absolute master at once in temporals and in spirituals.

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The Republic of Venice, on the contrary, so well known for her courtezans, for the restlessness and jealousy of her Government, is extremely feeble externally, though she is of higher antiquity, in a situation more advantageous, and under a much finer sky than Holland. Venice is a maritime power in the Mediterranean, hardly acknowledged as such in modern times, whereas Holland is enlivening the whole Earth by her commerce; because the first has restricted the rights of humanity to the class of Nobility, and the second has extended them to the whole people.

It is, farther, from the influence of this unjust partition, that Malta, with the finest port in the Mediterranean, situated between Africa and Europe, in the vicinity of Asia, and swarming with a young Nobility of undaunted courage, will ever remain the last Power in Europe, because the People there are reduced to nothing.

I shall here take occasion to observe, that hereditary nobility in a State destroys, at once, all emulation in both the nobly and ignobly born. It is destroyed in the first, because, being entitled by birth to pretend to every thing, they have no need to call in the assistance of merit; and in the second, being excluded from every pretension to rise, no degree of merit could avail them. This

is the political vice which has undermined the power of Portugal, and that of Spain; and not the monastic spirit, as so many Writers have asserted. The monkish order was all-powerful from the times of *Ferdinand* and *Isabella*. It was a Monk who decided at Court, the expedition of *Cbristopher Columbus* in quest of a new World, the conquest of which quadrupled in Spain the number of Gentlemen. Not a Spanish soldier went over to America, but gave himself out, on his arrival there, for a man of family, and who, on his return to Spain, with money in his pocket, did not make good his title. The same thing shewed itself among the Portuguese, who made conquests in Asia. The military order, in both these Nations, at that time performed prodigies, because the career of ambition, in feats of arms, was then open to the commonalty. But ever since it has been shut against them, by the prodigious number of gentlemen with which these two States abound, the balance has turned in favour of the monastic order, and conferred upon it a tribunitial Power.

However wonderful our political speculations may represent the threefold counterbalancing powers which constitute the Government of Great Britain, it is to the violent agitations of those powers we must ascribe the perpetual quarrels which disturb her happiness, and the venality
which

which has, at length, corrupted her. The Commons, I grant, form one of her Houses of Parliament, but the right of sitting in it as a representative, being restricted to persons possessed of such a revenue, it's doors must, of course, be shut against the admission of many a wise head, and be open to some not entirely of that description. An *Alcibiades* and a *Cataline* might have made a shining figure there ; but a *Socrates*, the just *Aristides*, *Epaminondas*, who transferred the Empire of Greece to Thebes, *Attilius-Regulus*, who was called from the plough to the Dictatorship, *Menenius-Agrippa*, who settled the dispute between the Senate and People ; no one of these could have procured a seat, because he had not an estate in land worth so much a year. Britain would destroy herself by her very boasted Constitution, did she not present a common career to every citizen, in her Marine. All the Orders of the State concur in this point of union, and give it such a preponderancy, that it fixes their political equilibrium. Whoever could destroy the Marine of England, would annihilate her Government. This unanimous concurrence of the whole Nation toward the cultivation of one single Art, has raised it to a height of perfection hitherto unattained in any other Country, and has rendered it the sole instrument of her power.

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If we glance a look on the other States which bear the name of Republic, we shall find internal disorder, and external weakness, increasing in proportion to the inequality of the citizens. Poland has reserved to the Nobility exclusively, all the authority, and left her Commonalty in the most detestable slavery ; so that war, which establishes between the citizens of one and the same Nation, a community of danger, establishes, between those of Poland, no community of reward. Her History exhibits nothing but a long series of bloody quarrels between Palatinate and Palatinate, City and City, Family and Family, which have always rendered her extremely miserable. The greatest part of the Nobility themselves are there reduced to such wretchedness, that they are obliged, for a subsistence, to serve the Grandees in the most contemptible employments, as our own Nobility formerly did under the feudal Government, and as is the case to this day in Japan : for wherever the peasantry are slaves, the yeomanry are menials. The calamity has, at length, overtaken Poland, in our own days, which would have fallen upon her long ago, had not the Kingdoms which surround her laboured then under the same defects in their several Constitutions. She has been parcelled out by her neighbours, in despite of her long political discussions, as the Empire of the Greeks was
by

by the Turks, at a time when certain priests, who had got possession of the public mind, were amusing them with theological subtilities.

In Japan, the wretchedness of the Nobles is in proportion to their tyranny. They formed at first a feudal Government, which it is so easy to subvert, as well as all those of the same nature; for the first of the feudal Chiefs who aspired at the sovereignty, effected his purpose by a single battle. He curtailed their power of determining their quarrels by civil wars, but left them in full possession of all their other privileges; that of abusing the peasants, who there are mere slaves, the power of life and death over all who are in their pay, even over their wives. The mass of the people, who, in extreme misery, have no way of subsisting, but by intimidating or corrupting their tyrants, have produced, in Japan, an incredible multitude of bonzes, of all sects, who have erected temples on every mountain; comedians and drolls, who have theatres set up at every cross-street of their cities; and courtezans in such shoals, that the traveller is pestered with them on every high road, and at every inn where he stops. But this very people set such a high value on the consideration exacted of them by the Nobility, that if so much as a cross look passes between two of them, fight they must; and if the insult be any thing
serious,

serious, it is absolutely necessary that both parties should rip up each other, under pain of infamy. To this hatred of it's tyrants we must impute the singular attachment which the Japanese expressed for the Christian Religion, because they hoped it was to efface, by it's morality, distinctions so abominable between man and man: and to popular prejudices we must refer, in the Nobility of that Country, the contempt which they expressed on a thousand occasions, for a life rendered so precarious from the opinion of another.

A sage equality, proportioned to the intelligence, and to the talents of all her subjects, has, for a long time, rendered China the happiest spot on the Globe: but a taste for pleasure having there, at last, produced a dissolution of the moral principle, money, the instrument of procuring it, is become the moving principle of the Government. Venality has there divided the Nation into two great classes, the rich and the poor. The ancient ranks which, in that Country, elevated men to all the public offices, still exist, but the rich only actually fill them. This vast and populous Empire having no longer any patriotism, but what consists in certain unmeaning ceremonies, has been, oftener than once, invaded by the Tartars, who were invited into the Country by the calamities which the People endured.

The

The Negros, in general, are considered as the most unfortunate species of Mankind on the face of the Globe. In truth, it looks as if some destiny had doomed them to slavery. The ancient curse pronounced by *Noah* *, is by some believed to be still actually in effect: “Curfed be Canaan! a
 “fervant of fervants fhall he be unto his brethren.” They themselves confirm it by their traditions. If we may give credit to a Dutch Author, of the name of *Bofman*, “the Negros of the
 “Guinea coaft allege, that GOD, having created
 “blacks and whites, propofed to them the power
 “of choofing between two things, namely, the
 “poffeffion of gold, and of the art of reading and
 “writing; and as GOD gave the power of the
 “firft choice to the blacks, they preferred gold;
 “and they left learning to the whites, which was
 “accordingly granted them. But that the CREA-
 “TOR, provoked at the appetite for gold which
 “they had manifested, immediately paffed a de-
 “cree, that the whites fhould have eternal domi-
 “nion over them, and that they fhould for ever
 “be fubject to their white brethren as flaves †”.

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* Genesis, chap. ix. ver. 25.

† *Bofman's Voyage to Guinea*, letter x. This decifion of modern Negros is highly to their honour. They feem to feel the inestimable value of knowledge. But could they have feen, in Europe, the condition of moft men of literature, compared with that

I do not mean to support, by Sacred Authority, nor by that which these unfortunate wretches themselves furnish, the tyranny which we exercise
over

that of men who possess gold, their tradition would have been completely reversed.

Similar opinions may be traced through other African black tribes, particularly among the blacks of the Cape de Verd Islands, as may be seen in the excellent account given of them by *George Robert*. This unfortunate Navigator was obliged to flee for refuge to the Island of St. John, where he received from the inhabitants the most affecting proofs of generosity and hospitality, after having undergone the most atrociously cruel treatment from his countrymen, the English pirates, who plundered his vessel.

It must, however, be acknowledged, that if some African tribes excel us in moral qualities, the Negros, in general, are very inferior to other Nations in those of the understanding. They have never to this day discovered the address of managing the elephant as the Asiatics have done. They have carried no one species of cultivation to it's highest degree of perfection. They are indebted for that of the greatest part of their alimentary vegetables to the Portuguese, and to the Arabians. They practise no one of the liberal Arts, which had made, however, some progress among the inhabitants of the New World, who are much more modern than they. Nature has placed them on a part of the Continent, from whence they might with ease have penetrated into America, as the winds which blow thither are easterly, that is, perfectly fair; but so far from that, they had not even discovered the islands in their vicinity, such as the Canaries and the Cape de Verds. The black Powers of Africa have never to this hour discovered genius equal to the construction of a brigantine. So far from attempting to extend
their

over them. If the malediction of a Father has been able to extend such an influence over his posterity, the benediction of GOD, which, under the Christian Religion, extends to them as well as to us, re-establishes them in all the liberty of the law of Nature. The precept of Christianity

their boundaries, they have permitted strangers to take possession of all their coasts. For in ancient times, the Egyptians and Phenicians settled on their eastern and northern shores, which are now in possession of the Turks and Arabians. And for some ages past, the Portuguese, the English, the Danes, the Dutch, and the French, have laid hold of what remained to the East, and to the South, and to the West, simply for the purpose of getting slaves.

It must needs be, after all, that a particular Providence should have preserved the patrimony of these children of Canaan, from the avidity of their brethren, the children of Shem and Japhet; for it is astonishing, that persons such as we are, the sons of Japhet in particular, who, as being younger brothers, were hunting after fortune all the world over, and who, according to the benediction of Noah, our Father, were to extend our lodging even into the tents of Shem, our elder brother, should never have established colonies, in a part of the world so beautiful as Africa is, so near us, in which the sugar-cane, the coffee plant, and most of the productions of Asia and America can grow, and, in a word, where slaves are the produce of the soil.

Politicians may ascribe the different characters of Negroes and Europeans to whatever causes they please. For my own part, I say it on the most perfect conviction, that I know no book, which contains monuments more authentic of the History of Nations, and of that of Nature, than the Book of Genesis.

which

which enjoins us to consider all men as brethren, speaks in their behalf, as in behalf of our own countrymen. If this were the proper place, I could demonstrate how Providence enforces, in their favour, the laws of universal justice, by rendering their tyrants, in our colonies, a hundred times more wretched than they are. Besides, how many wars have been kindled among the maritime Powers of Europe, on account of the African slave-trade? How many maladies, and corruptions of blood in families, have not the Negros produced among us?

But I shall confine myself to their condition in their own country, and to that of their compatriots who abuse their power over them. I do not know that there ever existed among them a single Republic, except it were, perhaps, some pitiful Aristocracy along the western coast of Africa, such as that of Fantim. They are under the dominion of a multitude of petty tyrants, who sell them at pleasure. But, on the other hand, the condition of those kings is rendered so deplorable by priests, fetichas, grigris, sudden revolutions, nay, the very want of the common necessities of life, that few of our common sailors would be disposed to change states with them. Besides, the Negros escape a considerable proportion of their miseries, by the thoughtlessness of their temper, and the levity of
their

their imagination. They dance in the midst of famine, as of abundance; in chains, as when at liberty. If a chicken's foot inspires them with terror, a small slip of white paper restores their courage. Every day they make up, and pull to pieces their gods, as the whim strikes them.

It is not in stupid Africa, but in India, the ancient wisdom of which stands in such high reputation, that the miseries of the Human Race are carried to their highest excess. The Bramins, formerly called Brachmans, who are the priests there, have divided the Nation into a variety of Casts, some of which they have devoted to infamy, as that of the Parias. No one will doubt that they have taken care to render their own sacred. No person is worthy to touch them, to eat with them, much less to contract any manner of alliance. They have contrived to prop up this imaginary grandeur by incredible superstitions. From their hands have issued that infinite number of Gods, of monstrous forms, which scare the human imagination all over Asia. The Commonalty, by a natural reaction of opinions, render them, in their turn, the most miserable of all mankind. They are obliged, in order to support their reputation, to wash themselves from head to foot, on the slightest contamination by contact; to undergo frequent and rigorous fastings; to submit to penances the most

VOL. II. F horrible,

horrible, before idols which they themselves have rendered so tremendous : and as the people are not permitted to intermix blood with them, they constrain, by the power of prejudice over the tyrants, their widows to burn themselves alive, with the body of the dead husband.

Is it not, then, a very horrible condition, for men reputed wise, and who give law to their Nation, to be witnesses of the untimely death, in circumstances so shocking, of their female friends and relations, of their daughters, their sisters, their mothers ? Travellers have cried up their knowledge : but is it not an odious alternative for enlightened men, either to terrify perpetually the ignorant, by opinions which, at the long-run, subjugate even those who propagate them ; or, if they are so fortunate as to preserve their reason, to make a shameful and criminal use of it, by employing it to disseminate falsehood ? How is it possible for them to esteem each other ? How is it possible to retire within themselves, and to lift up their eyes to that Divinity, of whom, as we are told, they entertain conceptions so sublime, and of whom they exhibit to the People representations so abominable ?

Whatever may be, as far as their ambition is concerned, the melancholy fruit of their policy, it has drawn in it's train the misery of this vast
Empire,

Empire, situated in the finest region of the Globe. Their military is formed of the Nobility, called Nairs, who possess the second rank in the State. The Bramins, in order to support themselves by force, as well as by guile, have admitted them to a participation in some of their privileges. Hear what *Walter Schouten* says, of the indifference expressed by the common People toward the Nairs, when any mischief befalls them. After a bloody encounter, in which the Dutch killed a considerable number of those who had taken the side of the Portugueze: “No outrage or insult,” says he *, “was offered to any artisan, peasant, fisherman, or other inhabitant of Malabar, not even in the rage of battle. They, in consequence, never thought of flight. A great many of them were posted at different places, merely as spectators of the action; and they appeared to take no manner of interest in the fate of the Nairs.”

I have been an eye-witness of the same apathy in Nations, whose Nobility forms a separate class, among others, in Poland. The Commonalty of India subject the Nairs, as well as the Bramins, to their share of the miseries of opinion. The Nairs are incapacitated to contract legitimate marriages. Many of them, known by the name of Amocas,

* Voyage to the East-Indies, vol. i. page 367.

are obliged to sacrifice themselves in battle, or on the death of their kings. They are the victims of their unjust honour, as the Bramins are of their inhuman religion. Their courage, which is merely professional spirit, far from being beneficial to their Country, is frequently fatal to it. From time immemorial, it has been desolated by their intestine wars; and it is so feeble externally, that handfuls of Europeans have made settlements in it, wherever they pleased. At the close of the war in 1762, a proposition was made in the Parliament of Great Britain, to make the complete conquest of it, and to pay off the national debt, with the riches which might have been extracted out of it; and this the Proposer undertook to effect, if he was landed in India with an army of five thousand Europeans. The boldness of the enterprize astonished no one of his compatriots, who were acquainted with the weakness of that Country, and it was laid aside, as is alleged, merely from the injustice of it.

In France, the People never acquire any share in the Government, from *Julius Cesar*, who is the first Writer that has made this observation, and who is not the last politician that has availed himself of it, to render himself easily its master, down to Cardinal *Richlieu*, who levelled the feudal power. During this long interval, our History presents nothing but a series of dissensions, of civil wars,

wars, of dissolute manners, of assassinations, of Gothic laws, of barbarous customs ; and furnishes nothing interesting to the Reader, let the President *Henault*, who compares it to the Roman History, say what he will. It is not merely because the fictions of the Romans are more ingenious than ours ; it is because we do not find in our History, that of a People, but only the history of some great family.

From this, however, must be excepted the Lives of some good Kings, such as those of St. *Louis*, of *Charles V.* of *Henry IV.* ; and of some good Men, who are interesting to us, for this very reason, that they interested themselves in behalf of the Nation. In every other case, it is impossible to discover about what the Government was employing itself : it studied the interest only of the Nobility. The Country was subjugated successively by the Romans, the Franks, the Goths, the Alains, the Normans. The facility with which France embraced Christianity, is a proof that she sought, in religion, a refuge from the miseries of slavery. To this sentiment of confidence the Clergy is indebted for the first rank which it obtained in the State. But the Clergy soon degenerated from it's first spirit ; and so far from meditating the destruction of tyranny, enlisted under the banner of tyrants ; adopted all their customs ;

assumed their titles; appropriated to itself their rights and their revenues; and even made use of their arms to maintain interests which were in such direct opposition to its morality. A great many churches had their knights and their champions, who supported their claims in single combat.

It would be unfair to impute to religion, the mischief occasioned by the avarice and the ambition of her ministers. She herself assists us in detecting their faults, and enjoins us to be on our guard against them. The greatest Saints, St. Jerom * among others, have exposed and condemned the vices of the clergy, with more vehemence than ever modern Philosophers have done. Much has been written of late to discredit religion, with a view to diminish the power of priests. But, universally, wherever she has fallen, their power has increased. Religion herself alone restrains them within due bounds. Observe in the Archipelago, and elsewhere, how many fraudulent and lucrative superstitions have been substituted by the Greek *Papas* and *Caloyers*, in place of the spirit of the Gospel! Besides, whatever reproach may be cast upon our own clergy, they have their answer ready, namely, that they have been, in all ages, like the rest of their compatriots, the children of

* Consult his Letters.

this world. The Nobles, Magistrates, Soldiers, nay, the Kings themselves, of former times, were no better than they.

They have been accused of promoting every where the spirit of intolerance, and of aiming at superiority, by preaching up humility. But most of them, repelled by the world, carry into their professional corps, that spirit of intolerance of which the world set the example, and of which they are the victims; and their ambition, frequently, is a mere consequence of that universal ambition, with which national education, and the prejudices of society, inspire all the members of the State.

Without meaning to make their apology, and much less satirically to inveigh against them, or any body of men whatever, whose evils it was not my wish to discover, except for the purpose of indicating the remedies which seem to me to be within their reach, I shall here confine myself to a few reflections on religion, which is, even in this life, the avenger of the wicked, and the consolation of the good.

The world, in these days, considers religion as the concern only of the vulgar, and as a mere po-

litical contrivance to keep them in order. Our Philosophers, state in opposition to it, the philosophy of *Socrates*, of *Epicætetus*, of *Marcus-Aurelius* ; as if the morality of those sages were less austere than that of JESUS CHRIST ; and as if the benefits to be expected from it were better secured than those of the Gospel ! What profound knowledge of the heart of man ; what wonderful adaptation to his necessities ; what delicate touches of sensibility, are treasured up in that divine Book ! I leave it's mysteries out of the question. Part of them, we are told, have been taken from *Plato*. But *Plato* himself borrowed them from Egypt, into which he had travelled ; and the Egyptians were indebted for them, as we are, to the Patriarchs. These mysteries, after all, are not more incomprehensible than those of Nature, and than that of our own existence. Besides, in our examination of them, we inadvertently mislead ourselves. We want to penetrate to their source, and we are capable only of perceiving their effects. Every supernatural cause is equally impenetrable to man. Man himself is only an effect, only a result, only a combination for a moment. He is incapable of judging of divine things according to their nature ; his judgment of them must be formed according to his own nature, and from the correspondence which they have to his necessities.

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If we make use of these testimonies of our weakness, and of these indications of our heart, in the study of religion, we shall find that there is nothing that can pretend to that name, on the face of the Earth, so perfectly adapted to the wants of human nature, as the religion of the Bible. I say nothing of the antiquity of it's traditions. The Poets of most Nations, Ovid among the rest, have sung the Creation, the happiness of the Golden Age, the indiscreet curiosity of the first woman, the miseries which issued from *Pandora's* Box, and the Universal Deluge, as if they had copied these Histories from the Book of Genesis.

To the Mosaic account of the Creation, and the recent existence of the World, have been objected the antiquity and the multiplicity of certain lavas in volcanos. But have these observations been accurately made? Volcanos must have emitted their fiery currents more frequently in the earlier ages, when the Earth was more covered with forests, and when the Ocean, loaded with it's vegetable spoils, supplied more abundant matter to their furnaces. Besides, as I have said in the course of this Work, it is impossible for us to distinguish between what is old and what is modern in the structure of the World. The hand of Creation must have manifested the impress of ages upon it, from the moment of it's birth. Were we to suppose it eternal,
and

and abandoned to the laws of motion simply, the period must be long past, when there could not have been the smallest rising on it's surface. The action of the rains, of the winds, and of gravity, would have brought down every particle of Land to the level of the Seas.

It is not in the works of GOD, but in those of men, that we are enabled to trace epochs. All our monuments announce the late Creation of the Earth which we inhabit. If it were, I will not say eternal, but of high antiquity only, we should, surely, find some productions of human industry much older than from three to four thousand years, such as all those that we are acquainted with. We have certain substances on which time makes no very perceptible alteration. I have seen, in the possession of the intelligent Count *de Caylus*, constellation rings of gold, or Egyptian talismans, as entire as if they had just come from the hand of the workman. Savages, who have no knowledge of iron, are acquainted with gold, and search after it, as much for it's durability as for it's shining colour. Instead, then, of finding antiques of only three or four thousand years, such as those of the most ancient Nations, we ought to possess some of sixty, of a hundred, of two hundred thousand years.

Lucretius

Lucretius, who ascribes the Creation of the World to atoms, on a system of Physics altogether unintelligible, admits that it is quite a recent production.

Præterea, si nulla fuit genialis origo
Terraï & cœli, semperque eterna fuere,
Cur supra bellum Thebanum, & funera Trojæ,
Non alias alii quoque res cecinere Poetæ.

*De rerum Naturâ, Lib. v. ver. 325 *.*

“ Had Heaven and Earth known no beginning of
“ existence, but endured from eternity, why have
“ we no Poets transmitting to us the knowledge
“ of great events, prior to the Theban war, and
“ the downfall of Troy ?”

The Earth is filled with the religious traditions of our Scriptures : they serve as a foundation to the religion of the Turks, the Persians, and the Arabians : they extend over the greatest part of Africa : we find them again in India, from whence all Nations and all Arts originally proceeded : We can trace them in the ancient and intricate

* Thus imitated :

If genial Nature gave the Heavens no birth,
And from eternal ages roll'd the Earth,
Why neither wars nor Poets—Sages, tell,
Till *Homer* sung, how mighty *Hector* fell ?

religion

religion of the Bramins* ; in the History of Brahma, or Abraham ; of his wife Saraï, or Sara ; in the incarnations of Wishtnou, or of Christnou ; in a word, they are diffused even among the savage tribes which traverse America.

I say nothing of the monuments of our religion, as universally diffused as her traditions, one of which, inexplicable on the principles of our Physics, proves a general Deluge, by the wrecks of marine bodies scattered over the surface of the Globe ; the other, irreconcilable to the laws of our Politics, attests the reprobation of the Jews, dispersed over all regions, hated, despised, persecuted, without Government, without a Country ; nevertheless, always numerous, always subsisting, and always tenacious of their Law. To no purpose have attempts been made to trace resemblances between their condition, and that of several other Nations, as the Armenians, the Guebres, and the Banians. But these last-mentioned Nations hardly emigrate beyond the confines of Asia : their numbers are extremely inconsiderable : they are neither hated nor persecuted by other Nations ; they have a Country ; and, finally, they have not adhered to the religion of their ancestors. Cer-

* See *Abraham Rogers*, his *History of the Manners of the Bramins*.

tain illustrious Authors have stated these supernatural proofs of a Divine Justice, in a very striking light. I shall satisfy myself with adducing a few more, still more affecting, from their correspondence to Nature, and to the necessities of Mankind.

The morality of the Gospel has been challenged, because JESUS CHRIST, in the country of the Gadarenes, permitted a legion of demons to take possession of a herd of two thousand swine, which were thereby precipitated into the Sea, and choked. "Why," ask the objectors, "ruin the proprietors of those animals?" JESUS CHRIST acted in this as a Legislator. The persons to whom the swine belonged were Jews; they transgressed, therefore, the Law which declares those animals unclean. But here again starts up a new objection, levelled at Moses. "Why are those animals pronounced unclean?" Because, in the Climate of Judea, they are subject to the leprosy. But here is a fresh triumph for our Wits. "The Law of Moses," say they, "was, then, relative to Climate; it could be at most, of consequence, a mere political constitution." To this I answer, that if I found in either the Old Testament, or the New, any usage whatever which was not relative to the Laws of Nature, I should be still more astonished. It is the character of a Religion di-

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vinely inspired, to be perfectly adapted to the happiness of Man, and to Laws antecedently enacted by the AUTHOR of Nature. From this want of correspondence, all false religions may be detected. And as to the point in question, the Law of Moses, from it's privations, was evidently intended to be the Law of a particular People; whereas that of the Gospel, from it's universality, must have been intended for the whole Human Race.

Paganism, Judaism, Mahometanism, have all prohibited the use of certain species of animal food; so that if one of those religions should become universal, it would produce either total destruction, or unbounded multiplication; each of which evidently would violate the plan of the Creation. The Jews and Turks proscribe pork; the Indians of the Ganges reverence the heifer and the peacock. There is not an animal existing which would not serve as a Feticha to some Negro, or as a Manitou to some Savage. The Christian Religion alone permits the necessary use of all animals; and prescribes abstinence from those of the Land, only at the season when they are procreating, and when those of the Sea abound on the shores, early in the Spring *.

* Is it possible to abstain from smiling? No, the prejudices of education, in a good man, excite a serious emotion, in a benevolent

All religions have filled their temples with carnage, and immolated to DEITY the life of the

nevolent mind. Brought up in the habit of abstinence from animal food, during the season of Lent, good M. *de Saint-Pierre* takes it for granted, that this is an institution of Christianity, and endeavours ingeniously to reconcile it to a law of Nature. But the truth is, the Gospel contains no such injunction; and the universality of that religion is still greater than even the enlarged mind of our Author apprehended, in one respect at least. How can it be imagined, that JESUS CHRIST, in fasting so long in the Wilderness, intended to set the example, of an annual abstinence of the same duration, to his disciples? What Jew ever thought of making *Moses* a pattern in this same respect? But while I regret the power of prejudice in another, let me take care that my own be overcome; or if any remain, that they be harmless, or rather on the side of virtue.

In the very next paragraph, our Author is betrayed into a similar mistake, respecting the nature and design of the Sacrament of the Lord's Supper, by the phrase in use, in that Church whose communion he had, from education, adopted. That ordinance is, in Roman Catholic countries, denominated the *sacrifice* of the mass. Carried away by the word *sacrifice*, M. *de Saint-Pierre* is led to represent the Christian Worshipper as presenting to GOD, in the Sacrament, *an offering* of bread and wine. But it is not so. He is commanded to *take and eat*, to *take and drink*, in remembrance of CHRIST. The sacrifice which Christianity demands, and which every sincere communicant presents to GOD, is the *living sacrifice* of himself, which St. Pauls calls our *reasonable service*. We meet, however, with a beautiful train of thought, in what follows, respecting the elementary part of the institution, strongly characteristic of a pious, penetrating, and comprehensive mind; and which the devout Protestant may peruse to advantage.

H. H.

brute

brute creation. The Bramins themselves, so full of compassion to the beasts, present to their idols the blood and life of men. The Turks offer in sacrifice camels and sheep. Our Religion, more pure, if we attend merely to the matter of the sacrifice, presents in homage to GOD bread and wine, which are the most delicious gifts which He has bestowed on Man. Nay, here we must observe, that the vine, which grows, from the Line up to the fifty-second degree of North Latitude, and from England to Japan, is the most widely diffused of all fruit-trees; that corn is almost the only one of alimentary plants which thrives in all Climates; and that the liquor of the one, and the flour of the other, is capable of being preserved for ages, and of being transported to every corner of the Earth.

All religions have permitted to men, a plurality of women in marriage: Christianity permitted but one, long before our Politicians had observed that the two sexes are born in nearly equal numbers. All have boasted of their genealogies; and, regarding with contempt most other Nations, have permitted their votaries, when they had it in their power, to reduce them to a state of slavery. Ours alone has protected the liberty of all men, and has called them back to one and the same destination, as to one and the same origin. The religion of
the

the Indians promises pleasure in this world ; that of the Jews, riches ; that of the Turks, conquest : ours enjoins the practice of virtue, and promises the reward of it in Heaven. Christianity alone knew that our unbounded passions were of divine original. It has not limited love, in the heart of Man, to wife and children, but extends it to all Mankind : it circumscribes not ambition to the sphere of a party, to the glory of one Nation, but has directed it to Heaven and Immortality : Our Religion intended that our passions should minister as wings to our virtues *. So far from uniting us

* Religion alone gives a sublime character to our passions. It diffuses charms ineffable over innocence, and communicates a divine majesty to grief. Of this I beg leave to quote two instances. The one is extracted from an account, not in very high estimation, of the Island of St. Erini, (chap. xii.) by Father *Francis Richard*, a jesuit-missionary; but which contains some things that please me from their native simplicity. Of the other I was an eye-witness.

“ After dinner,” says Father *Richard*, “ I retired to St. George’s, which is the principal Church of the Island of Stamphalia. There one of the *Papas* presented to me a book of the Gospels, in order to discover if I could read their language as well as I spake it. Another came and asked me, whether our holy father the Pope were a married man. But I was still more amused by the question of an old woman, who, after looking steadily at me for a considerable time, begged me to tell her if I really believed in GOD and in the Holy Trinity. Yes, said I, and to give her full assurance of

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on Earth, to render us miserable, it is she who bursts asunder the chains by which we are held captive. How many calamities has she footed !
how

“ it, I made the sign of the cross. O ! how glad I am, says
 “ she, that you are a Christian ! We had some doubt of it. On
 “ this I pulled from my bosom the cross which I wore : The
 “ woman, quite transported with joy, exclaimed, Why should
 “ we any longer call in question his being a good Catholic,
 “ seeing he worships the cross ! After her, another ap-
 “ plied to me, of whom I asked, whether she had a mind to
 “ confess. How ! replied she, would it not be a sin to confess
 “ to such gentlemen as you ? No, said I, for though I am
 “ French, I confess in Greek. I will go, replied she, and ask
 “ our Bishop. In a little while she returned, perfectly de-
 “ lighted at having obtained his permission. After confession,
 “ I gave her an *Agnus Dei*, which she went about and shewed
 “ to every one, as a curiosity which they had never seen before.
 “ I was presently beset by a multitude of women and children,
 “ who pressed me to give them some. I answered, that those
 “ *Agnuses* were given only to such as had confessed. In or-
 “ der to gain their point, they instantly offered to confess,
 “ and wanted to do so by pairs ; that is to say, a young girl
 “ with her female confidant, a young man with his bosom-
 “ friend, whom they denominate ἀδελφοποιῶν, *Adelphopoiton*,
 “ confidential brother, alleging as a reason, that they had but
 “ one heart ; and that, therefore, there ought to be nothing se-
 “ cret between them. It was with difficulty I could separate
 “ them ; however they were under the necessity of submit-
 “ ting.”

Some years ago, I happened to be at Dieppe, about the time
 of the autumnal Equinox ; and a gale of wind having sprung
 up, as is common at that season, I went to look at its effects

on

how many tears has she wiped away ! how many hopes has she inspired, when there was no longer room for hope ! how many doors of mercy thrown open

on the sea-shore. It might be about noon. Several large boats had gone out of the harbour in the morning, on a fishing expedition. While I was observing their manœuvres, I perceived a company of country lasses, handsome, as the *Cauchois* generally are, coming out of the city, with their long white head dresses, which the wind set a flying about their faces. They advanced playfully to the extremity of the pier, which was, from time to time, covered with the spray which the dashing of the waves excited. One of them kept aloof, sad and thoughtful. She looked wistfully at the distant boats, some of which were hardly perceptible, amidst a very black Horizon. Her comrades, at first, began to rally, with an intention to amuse her: What, said they, is your sweetheart yonder ? But finding her continue inflexibly pensive, they called out, Come, come, don't let us stop any longer here ! Why do you make yourself so uneasy ? Return, return with us ; and they resumed the road that led to town. The young woman followed them with a slow pace, without making any reply, and when they had got nearly out of sight, behind some heaps of pebbles which are on the road, she approached a great crucifix, that stands about the middle of the pier, took some money out of her pocket, dropped it into the little chest at the foot of the cross ; then kneeled down, and with clasped hands, and eyes lifted up to Heaven, put up her prayer. The billows breaking with a deafening noise on the shore, the wind which agitated the large lanterns of the crucifix, the danger at sea, the uneasiness on the land, confidence in Heaven, gave to the love of this poor country girl, an extent, and a dignity, which the Palaces of the Great cannot communicate to their passions.

open to the guilty ! how many supports given to innocence ! Ah ! when her altars arose amidst our forests, ensanguined by the knives of the Druids, how the oppressed flocked to them in quest of an asylum ! How many irreconcilable enemies there embraced with tears ! Tyrants, melted to pity, felt, from the height of their towers, their arms drop from their hands. They had known the Empire only of terror, and they saw that of charity spring up in it's room. Lovers ran thither to mingle vows, and to swear a mutual affection, which should survive even the tomb. She did not allow a single day to hatred, and promised eternity to love. Ah ! if this Religion was designed only for the consolation of the miserable, it was, of course, designed to promote that of the Human Race !

It was not long before her tranquillity returned ; for all the boats gained the harbour a few hours afterward, without having sustained the slightest injury.

Religion has been frequently calumniated, by having the blame of our political evils laid to her charge. Hear what *Montagne*, who lived in the midst of those civil wars, says on this subject : “ Let us confess the truth : Whoever should make
 “ a draught from the army, even the most legally embodied,
 “ of those who serve from the zeal of a religious affection, and
 “ add to them, such as regard only the protection of the laws
 “ of their Country, or the service of the Prince, would find it
 “ difficult to make up of them one complete company of soldiers.” *Essays*, Book ii. chap. xii. page 317.

Whatever

Whatever may have been said of the ambition of the Church of Rome, she has frequently interposed in behalf of suffering humanity. I produce an instance taken at random, and which I submit to the judgment of the Reader. It is on the subject of the African slave-trade, which is practised without scruple by all the Christian and maritime Powers of Europe, and condemned by the Court of Rome. “In the second year of his mission, *Merolla* was left alone at Sogno, by the death of the Superior General, whose place Father *Joseph Busseto* went to fill at the Convent of Angola. Much about the same time, the Capuchin missionaries received a letter from Cardinal *Cibo*, in name of the sacred College. It contained severe reproaches on the continuation of the sale of slaves, and earnest remonstrances, to put an end, at last, to that abominable traffic. But they saw little appearance of having it in their power to execute the orders of the Holy See, because the commerce of the Country consists entirely in ivory and slaves*.” All the efforts of the missionaries issued simply in an exclusion of the English from a share of the traffic.

* Extract from the *General History of Voyages*, by the Abbé Prevost. Book xxii. page 180: *Merolla*. A. D. 1633.

The Earth would be a paradise, were the Christian Religion producing universally it's native effects. It is Christianity which has abolished slavery in the greatest part of Europe. It wrested, in France, enormous possessions out of the hands of the Earls and Barons, and destroyed there a part of their inhuman rights, by the terrors of a life to come. But the people opposed still another bulwark to tyranny, and that was the power of the Women.

Our Historians are at pains to remark the influence which some women have had under certain reigns, but never that of the sex in general. They do not write the History of the Nation, but merely the History of the Princes. Women are nothing in their eyes, unless they are decorated with titles. It was, however, from this feeble division of Society, that Providence, from time to time, called forth it's principal defenders. I say nothing of those intrepid females, who have repelled, even by arms, the invaders of their country, such as *Joan of Arc*, to whom Rome and Greece would have erected altars: I speak of those who have defended the nation from internal foes, much more formidable still than foreign assailants; of those who are powerful from their weakness, and who have nothing to fear, because they have nothing to hope.

From

From the sceptre down to the shepherdess's crook, there is, perhaps, no country in Europe where women are treated so unkindly by the Laws, as in France; and there is no one where they have more power. I believe it is the only kingdom of Europe where they are absolutely excluded from the throne. In my country, a father can marry his daughters, without giving them any other portion than a chaplet of roses: at his death, they have all together only the portion of a younger child. This unjust distribution of property is common to the clown as to the gentleman. In the other parts of the kingdom, if they are richer, they are not happier. They are rather sold, than given, in marriage. Of a hundred young women, who there enter into the married state, there is not, perhaps, one who is united to her lover. Their condition was even still more wretched in former times. Cæsar, in his Commentaries, informs us, "That the husband had the power of life and death over his wife, as well as over his children; that when a man of noble birth happened to die, the relations of the family assembled; if there was the slightest shadow of suspicion against his wife, she was put to the torture as a slave; and if found guilty, was condemned to the flames, after a previous process of inexpressible suffering*."

* Gallic War, book vi.

What is singularly strange, at that very time, and even before, they enjoyed the most unbounded power. Hear what the good *Plutarch* says on the subject, as he is communicated to us, through the medium of the good *Amyot*. “ Before the Gauls
“ had passed the Alps, and got possession of that
“ part of Italy which they now inhabit, a violent
“ and alarming sedition arose among them, which
“ issued in a civil war. But their wives, just as
“ the two armies were on the point of engaging,
“ threw themselves into the intervening space;
“ and taking up the cause of their dissension, discussed it with so much wisdom, and decided
“ upon it with such moderation and equity, that
“ they gave complete satisfaction to both parties.
“ The result was an unanimous return to mutual
“ benevolence, and cordial friendship, which reunited not only city to city, but family to family: and this with so much effect, that ever
“ since, they invariably consult their wives, on all
“ deliberations, whether respecting war or peace;
“ and they settle all disputes and differences with
“ neighbours and allies, conformably to the advice
“ of the women. Accordingly, in the agreement
“ which they made with *Hannibal*, when he marched through Gaul, among other stipulations, this
“ was one, that if the Gauls should have occasion
“ to complain of any injury done them by the
“ Carthaginians, the cause was to be submitted to
“ the

“ the decision of the Carthaginian Officers and
“ Governors serving in Spain : and if, on the con-
“ trary, the Carthaginians could allege any ground
“ of complaint against the Gauls, the matter
“ should be left to the determination of the Wives
“ of the Gauls *.”

It will be difficult to reconcile these two clashing authorities, unless we pay attention to the re-act-
tion of human things. The power of women pro-
ceeds from their oppression. The commonalty,
as oppressed as they, gave them their confidence,
as they had given theirs to the people. Both par-
ties were wretched, but misery attracted them to-
ward each other, and they made a common stock
of woe. They decided with the greater equity,
that they had nothing to gain or lose. To the
women we must ascribe the spirit of gallantry, the
thoughtlessness, the gaiety, and, above all, the
taste for raillery, which have, at all times, charac-
terized our Nation. With a song simply, they
have oftener than once made our tyrants tremble.
Their ballads have sent many a banner into the
field, and put many a battalion to flight. It is by
them that ridicule has acquired such a prodigious
influence in France, as to have become the most

* Plutarch, vol. ii. in folio : *Virtuous Actions of Women* ;
page 233.

terrible weapon which it is possible to employ, though it be the armour only of the weak, because women are the first to lay hold of it; and as, from national prejudice, their esteem is the first of blessings, it follows, that their contempt must be the most grievous calamity imaginable *.

Cardinal *Richlieu* having, at last, restored to Kings the legislative authority, thereby stripped the Nobility, in a great measure, of the power of injuring each other by civil wars; but he was not able to abolish among them the rage for duelling, because the root of this prejudice is in the people, and because edicts have no power over their opinions when they are oppressed. The edict of the Prince prohibits the gentleman to go to meet his antagonist in single combat, and the opinion of his

* A provincial Academy, some years ago, proposed this question as the subject for the prize of Saint *Louis*; "In what manner female education might be made to contribute toward rendering men better?" I treated it, and was guilty of committing two faults of ignorance, not to mention others. The first was, my presuming to write on such a subject, after *Fenelon* had composed an excellent treatise on the education of young women; and the second, to think of arguing for truth in an Academy. The one in question did not bestow the prize, and recalled its subject. All that can be said on this question is, that in every country, women are indebted for their empire, only to their virtues, and to the interest which they have always taken in behalf of the miserable.

valet-

valet-de-chambre forces him out. The Nobility arrogate to themselves all the national honour, but the People determine for them the object of it, and allot it's proportions. *Louis XIV.* however, gave back to the People, a part of their natural liberty, by means of his very despotism. As he hardly saw any thing else in the world, except himself, every one appeared in his eyes nearly equal. It was his wish, that all his subjects should have permission to contribute their exertions toward the extension of his glory, and he rewarded them in proportion as such exertions had promoted this end. The desire of pleasing the Prince reduced all ranks to a level. Under that reign, of consequence, were seen multitudes of men of all classes, rendering themselves eminent, each in his several way. But the misfortunes of that great King, and perhaps his policy, having obliged him to descend to the sale of employments, of which the pernicious example had been set him by his predecessors, and which has been extended, since his time, to the meanest offices in the State, this gave the finishing stroke to the ancient preponderancy of the Nobility; but it gave rise, in the Nation, to a power much more dangerous; that of gold. This, this has levelled every rival influence, and triumphed over even the power of women*.

* As most men are shocked at abuses, only by seeing them in detail, because every thing great dazzles, and commands respect,
I shall

And first, the Nobility, having preserved a part of their privileges, in the country; tradespeople possessed of some fortune, do not chuse to live there, for fear of being exposed, on the one hand, to insult, and of being confounded, on the other, with the peasantry, by paying tallage and drawing for the militia. They like better to live in small cities, where a multitude of financial employments and revenues enable them to subsist in indolence and listlessness, rather than to vivify the fields which degrade their cultivators. Hence it comes to pass, that small landed estates sink in value, and are year after year falling into the hands of the great proprietors. The rich, who make the purchases of them, parry the inconveniencies to which they are subject, either by their

I shall here produce a few instances of the effect of venality in the lower orders of Society. All the subaltern conditions which naturally rank under others, of right, are become the superiors, in fact, merely because they are the richer. Accordingly, it is the Apothecary, now-a-days, who has the employing of the Physician; the Attorney of the Advocate; the Handicraft of the Merchant; the Master-mason of the Architect; the Bookseller of the Scholar, even those of the Academy; the Chair-hirer in Church, of the Preacher, &c.—I shall say no more. It is easy to see to what all this leads. From this venality alone must ensue the decline of all talents. It is, in fact, abundantly perceptible, on comparing those of the age in which we live, with those of the age of *Louis XIV.*

personal

personal nobility, or by buying off the imposts under which they labour.

I know well, that a celebrated Farmer-general, some years ago, greatly cried up the over-grown proprietors, because, as he alleged, they could afford to give a better bargain than the smaller : but without considering whether they could sell corn cheaper, and all the other consequences of the *nett produce*, which attempts have been made to establish as the alone standard and object of agriculture, nay, of morality ; it is certain, that if any given number of wealthy families were, year after year, to purchase the lands which might lie commodiously for them, such family bargains would speedily become fatal to the State. I have often been astonished, that there is no law in France, to prevent the unbounded accumulation of landed property. The Romans had censors, who limited, in the first instance, the extent of a man's possession to seven acres, as being sufficient for the subsistence of one family. By the word which we translate *acre*, was understood as much land as a yoke of oxen could plow in one day. As Rome increased in luxury, it was extended to five hundred : but even this Law, though indulgent in the extreme, was soon infringed, and the infraction hurried forward the ruin of the Republic.

“ Extensive

“ Extensive parks,” says *Pliny* *, “ and un-
 “ unbounded domains, have ruined our own Italy,
 “ and the Provinces which the Romans have con-
 “ quered : for that which occasioned the victories,
 “ obtained by *Nero* (the Consul) in Africa, was
 “ simply this, six men were in possession of al-
 “ most one half of Numidia, when *Nero* defeated
 “ them.” *Plutarch* informs us, that in his time,
 under *Trajan*, you could not have raised three
 thousand men in all Greece, which had formerly
 furnished armies so numerous ; and that you might
 have sometimes travelled a whole day, on the high
 roads, without meeting a human being, except
 now and then a straggling solitary shepherd. The
 reason was, Greece had by this time been parcelled
 out among a few great proprietors.

Conquerors have always met with a very feeble
 resistance in countries where property is very un-
 equally divided. We have examples of this in all
 ages, from the invasion of the Lower-Empire by
 the Turks, down to that of Poland in our own
 days. Overgrown estates destroy the spirit of pa-
 triotism, at once, in those who have every thing,
 and in those who have nothing. “ The shocks of
 “ corn,” said *Xenophon*, “ inspire those who raise
 “ them with courage to defend them. The fight

* Natural History, Book xviii. chap. iii. and vi.

“ of them in the fields, is as a prize exhibited in
“ the middle of the theatre, to crown the con-
“ queror.”

Such is the danger to which excessive inequality of property exposes a State outwardly ; let us take a look of the internal mischief which it produces. I have heard a person of undoubted veracity relate, that an old Comptroller-general having retired to his native province, made a very considerable purchase in land. His estate was surrounded by about fifty small manors, the annual rent of which might be from fifteen hundred to two thousand livres each *. The proprietors of these were good country-gentlemen, who had through a succession of generations supplied their Country with gallant officers and respectable matrons. The Comptroller-general, desirous of extending his landed property, invited them to his castle, entertained them magnificently, gave them a taste for Parisian luxury, and concluded with an offer of double the value of their estates, if they thought proper to dispose of them. They to a man accepted his offer, imagining they were going to double their revenue, and in the hope, no less fallacious to a country gentleman, of securing a powerful protector at Court. But the difficulty of laying

* About from sixty to fourscore guineas.

out their money to advantage, a taste for elegant expence, inspired by the sight of sums of money such as they never before had in their coffers, in a word, frequent journies to Paris, and back to the country, soon melted away the price of their patrimony. These respectable families disappeared one after another ; and thirty years afterward, one of their descendants, who could reckon among his ancestors a long succession of captains of dragoons, and knights of St. *Louis*, was found scampering over his paternal inheritance, on foot, soliciting the place of keeper of a salt-office, to keep him from starving.

Such are the mischiefs produced among the citizens of a country, by the excessive accumulation of property. Those produced on the state of the lands are not less to be deplored. I was, some years ago, in Normandy, at the house of a gentleman in affluent circumstances, who cultivated, himself, a very considerable grass-farm, situated on a rising ground, of a very indifferent soil. He walked me round his vast enclosure, till we came to a large space, completely over-run with mosses, horsetail, and thistles. Not a blade of good grass was to be seen. The soil, in truth, was at once ferruginous and marshy. They had intersected it with many trenches, to drain off the water, but all to no purpose : nothing could grow.

Immediately

Immediately below, there was a series of small farms, the face of which was clothed with grassy verdure, planted with apple-trees in full fruit, and enclosed with tall alder-trees. The cows were feeding among the trees of the orchards, while the country-girls sung, as they were spinning, around the door. These "native wood-notes wild," repeated from distance to distance, under the shade of the trees, communicated to this little hamlet, a vivacity which increased still more the nakedness, and the depressing solitude, of the spot where we were. I asked its possessor, How it came to pass, that lands so contiguous, should present an aspect so very different ?

"They are," replied he, "of the self-same nature, and there formerly were, on this very spot, small houses similar to those which you see below. I made a purchase of them, but sadly to my loss. Their late inhabitants having abundance of leisure, and a small compass of ground on their hands, cleared away the mosses, the thistles, manured it ; up sprung the grass. Had they a mind to plant ? They dug holes, they removed the stones, and filled them with good mould, which they went to collect from the bottom of the ditches, and along the high-way's side. Their trees took root and prospered. But all these necessary operations cost me incredible

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“dible time and expenſe. I never was able to
“make out the common intereſt of my money.”

I am bound in juſtice to remark, that this wretched ſteward, but excellent gentleman, in every ſenſe of that word, was at that very time relieving, by his charity, moſt of thoſe ancient farmers, now diſabled to earn a livelihood. Here, then, is another inſtance of both men and lands rendered uſeleſs, by the injudicious extenſion of property. It is not upon the face of vaſt domains, but into the boſom of induſtry, that the FATHER of Mankind pours out the precious fruits of the Earth.

I could eaſily demonſtrate, that enormous property is the principal cauſe of the multiplication of the poor all over the kingdom, for the very reaſon which has procured it the elogium of many of our Writers, namely, that it ſpares men the labours of agriculture. There are many places, where there is no employment to give the peaſantry during a conſiderable part of the year; but I ſhall inſiſt only on their wretchedneſs, which ſeems to increaſe with the riches of the diſtrict where their lot is caſt.

The diſtrict of Caux is the moſt fertile country which I know in the World. Agriculture, on the
great

great scale, is there carried to the height of perfection. The deepness of the soil, which, in some places, extends to five and six feet; the manure supplied from the stratum of marl over which it is raised, and that of the marine plants on it's shores, which are spread over it's surface, concur toward clothing it with the noblest vegetables. The corn, the trees, the cattle, the women, the men are there handsomer and more vigorous than any where else. But as the Laws have assigned, in that province, in every family, two thirds of the landed property to the first-born, you find there unbounded affluence, on the one hand, and extreme indigence, on the other.

I happened one day to be walking through this fine country; and admired, as I went, it's plains so well cultivated, and so extensive, that the eye loses itself in the unbounded prospect. Their long ridges of corn, humouring the undulations of the plain, and terminating only in villages, and castles surrounded with venerable trees, presented the appearance of a Sea of verdure, with here and there an island rising out of the Horizon. It was in the month of March, and very early in the morning. It blew extremely cold from the North-east. I perceived something red running across the fields, at some distance, and making toward the great road, about a quarter of a league before me. I

quickened my pace, and got up in time enough to see that they were two little girls in red jackets and wooden shoes, who, with much difficulty, were scrambling through the ditch which bounded the road. The tallest, who might be about six or seven years old, was crying bitterly. "Child," said I to her, "what makes you cry, and whither are you going at so early an hour?" "Sir," replied she, "my poor mother is very ill. There is not a morsel of broth to be had in all our parish. We are going to that church in the bottom, to try if the Curé of this parish can find us some. I am crying because my little sister is not able to walk any farther." As she spoke, she wiped her eyes with a bit of canvas, which served her for a petticoat. On her raising up the rag to her face, I could perceive that she had not the semblance of a shift. The abject misery of these children, so poor, in the midst of plains so fruitful, wrung my heart. The relief which I could administer to them was small indeed. I myself was then on my way to see misery in other forms.

The number of wretches is so great, in the best cantons of this province, that they amount to a fourth, nay, to a third of the inhabitants in every parish. The evil is continually on the increase. These observations are founded on my personal experience,

experience, and on the testimony of many parish-ministers of undoubted veracity. Some Lords of the Manor order a distribution of bread to be made, once a week, to most of their peasantry, to eke out their livelihood. Ye stewards of the public, reflect that Normandy is the richest of our provinces; and extend your calculations, and your proportions, to the rest of the Kingdom! Let the morality of the financier supersede that of the Gospel; for my own part, I desire no better proof of the superiority of Religion to the reasonings of Philosophy, and of the goodness of the national heart to the enlarged views of our policy, than this, that notwithstanding, the deficiency imputable to our laws, and our errors in almost every respect, the State continues to support itself, because charity and humanity almost constantly interpose in aid of Government.

Picardy, Brittany, and other provinces, are incomparably more to be pitied than Normandy. If there be twenty-one millions of persons in France, as is alleged, there must be then, at least, seven millions of paupers. This proportion by no means diminishes in the cities, as may be concluded from the number of foundlings in Paris, which amounts, one year with another, to six or seven thousand, whereas the number of children, not abandoned by their parents, does not exceed,

in that city, fourteen or fifteen thousand. And it is reasonable to suppose, that among these last, there must be a very considerable proportion the progeny of indigent families. The others are partly, it must be admitted, the fruit of libertinism ; but irregularity in morals proves equally the misery of the people, and even more powerfully, as it constrains them at once to renounce virtue, and to stifle the very first feelings of Nature.

The spirit of finance has accumulated all these woes on the head of the People, by stripping them of most of the means of subsistence ; but, what is infinitely more to be regretted, it has sapped the foundations of their morality. It no longer esteems or commends any but those who are making a fortune. If any respect be still paid by it, to talents and virtue, this is the only reason, it considers these as one of the roads to wealth. Nay, what, in the phrase of the world, is called good company, has hardly any other way of thinking. But I should be glad to know, whether there be any honourable method of making a fortune, for a man who has not already got money, in a country where every thing is put up to sale. A man must, at least, intrigue, unite himself to a party and flatter it, secure puffers and protectors ; and for this purpose he must be dishonest, corrupt, adulate, deceive, adopt another man's passions, good or
bad,

bad, in a word, let himself down in one shape or another. I have seen persons attain every variety of situation; but, I speak it without reserve, whatever praise may have been bestowed on their merit, and though many of them really had merit, I never saw any one, even of the strictest honour, raise himself, and preserve his situation, but by the sacrifice of some virtue.

Let us now look at the re-actions of these evils. The people usually balance the vices of their oppressors by their own. They oppose corruption to corruption. From the prolific womb of vulgar debauchery issues a monstrous swarm of buffoons, comedians, dealers in luxury of every sort, nay, even men of letters, who, to flatter the rich, and save themselves from indigence, extend dissipation of manners and of opinions to the remotest extremity of Europe. In the class of the unmarried vulgar, we find the most powerful bulwark opposed to rank and wealth. As this is a very numerous body, and comprehends not only the youth of both sexes, who, with us, do not form early marriages, but an infinite number of men besides, who, from peculiarity of condition, or want of fortune, are deprived, as youth is, of the honours of Society, and of the first pleasures of Nature, they constitute a formidable association, which has all reputations at their mercy, together with the

power of disturbing the peace of all families. These are the persons who retail, for a dinner, that inexhaustible collection of anecdotes, favourable or unfavourable, which are, in every instance, to regulate public opinion.

It is not in the power of a rich man to marry a handsome wife, and enjoy himself at home in his own way; those persons lay him under the necessity, unless he would be laughed at, that is, under pain of the severest evil which can befall a Frenchman, of making his wife the central point of all fashionable society; he must exhibit her at all public places; and adopt the manners which his plebeian dictators think proper to prescribe, however contradictory they may be to Nature, and however inconsistent with conjugal felicity. While, as a regularly embodied army, they dispose of the reputation and the pleasures of the rich, two of the columns attack their fortune in front, in two different ways. The one employs the method of intimidation, and the other that of seduction.

I shall not here confine my reflections to the power and wealth gradually acquired by several religious orders, but extend them to their number in general. Some politicians pretend, that France would become too populous, were there no convents in it. Are England and Holland overpeopled,

peopled, where there is no such thing ? It betrays, besides, little acquaintance with the resources of Nature. The more inhabitants any country contains, the more productive it is. France could maintain, perhaps, four times more people than it now contains, were it, like China, parcelled out into a great number of small freeholds. We must not form our judgment of its fertility from its immense domains. These vast, deserted districts yield only one crop in two years, or, at most, two in three. But with how many crops, and how many men, are small tenements covered ! Observe, in the vicinity even of Paris, the meadow-land of St. Gervais. The soil is, in general, of a middling quality ; and, notwithstanding, there is no species of vegetable which our Climate admits of, but what the industry of cultivation is there capable of producing. You see at once fields of corn, meadow grounds, kitchen-gardens, flower-plots, fruit-trees, and stately forest-trees. I have seen there, in the same field, cherry-trees growing in potatoe-beds ; vines clambering up along the cherry-trees, and lofty walnut-trees rising above the vines ; four crops, one above another, within the earth, upon the earth, and in the air. No hedge is to be seen there, separating possession from possession, but an inter-communication worthy of the Golden Age.

Here

Here a young rustic, with a basket and ladder, mounts a fruit-tree, like another *Vertumnus* ; while some young girl, in a winding of the adjoining valley, sings her song loud enough to be heard by him, presenting the image of another *Pomona*. If cruel prejudices have stricken with sterility and solitude a considerable part of France, and henceforth allot the possession of a great Kingdom to a little handful of proprietors, how is it that, instead of Founders of new orders, Founders of new colonies do not arise among us, as among the Egyptians and the Greeks ? Shall France never have to boast of an *Inachus*, and of a *Danaüs* ? Why do we force the African tribes to cultivate our lands in America, while our own peasantry is starving for want of employment at home ? Why do we not transport thither our miserable poor by families ; children, old men, lovers, cousins, nay, the very churches and saints of our villages, that they may find in those far distant lands, the loves and the illusions of a country.

Ah ! had liberty and equality been invited to those regions, where Nature does so much with moderate cultivation, the cottages of the New World would, at this day, have been preferable to the palaces of the Old. Will another Arcadia never spring up in some corner of the Earth ? When I imagined I had some influence with men
in

in power, I endeavoured to exert it in projects of this nature ; but I have never had the felicity of falling in with a single one, who took a warm interest in the happiness of Mankind. I have endeavoured to trace, at least, the plan of them, as a legacy to those who shall come after me, but the clouds of calamity have spread a gloom over my own life ; and the possibility of enjoying happiness, even in a dream, is no longer my portion.

Politicians have considered war itself as necessary to a State, because, as they pretend, it takes off the superflux of Mankind. In general, they have a very limited knowledge of Human Nature. Independent of the resources of the sub-division of property into small allotments, which every where multiply the fruits of the Earth, we may rest assured, that there is no country but what has the means of emigration within its reach, especially since the discovery of the New World. Besides, there is not a single State, even among those which are best peopled, but what contains immense tracts of uncultivated land. China and Bengal are, I believe, the countries on the Globe which contain most inhabitants. In China, nevertheless, are many and extensive deserts, amidst its finest provinces, because avarice attracts those who should cultivate them, to the vicinity of great rivers, and to the cities, for the conveniency of commerce.

commerce. Many enlightened travellers have made this observation.

Hear what that honest Dutchman, *Walter Schouten*, says of the deserts of Bengal. “Toward the South, along the sea-coast, at the mouth of the Ganges, there is a very considerable extent of territory, desert and uncultivated, from the indolence and inactivity of the inhabitants, and also from the fear which they are under of the incursions of those of Arracan; and of the crocodiles and other monsters which devour men, lurking in the deserts, by the sides of brooks, of rivers, of morasses, and in caverns*.” Obstacles very inconsiderable, it must be allowed, in a Nation where Fathers sometimes sell their children for want of the means of supporting them! *Bernier*, the physician, remarks likewise, in his travels over the Mogul Empire, that he found a great many, but deserted islands, at the mouth of the Ganges,

We must ascribe, in general, to the excessive number of bachelors, that of profligate women; which universally are in exact proportion to each other. This evil, too, is the effect of a natural re-action. As the two sexes are born and die in

* *Walter Schouten's Voyage to the East-Indies*, vol. ii. page 154.
equal

equal numbers, every man comes into the world, and leaves it, in company with his female. Every man, therefore, who prefers celibacy to the married state, dooms a female, at the same time, to a single life. The ecclesiastical order robs the sex of so many husbands; and the social order deprives them of the means of subsistence. Our manufactures and machinery, so ingeniously industrious, have swallowed up almost all the arts by which they were formerly enabled to earn a livelihood. I do not speak of those who knit stockings, embroider, weave, &c. employments which, in better times, so many worthy matrons followed, but which are now entirely engrossed by persons bred to the business, but we have, forsooth! tailors, shoemakers, male hair-dressers for the ladies. We have men-milliners, dealers in linen, gauze, muslin, gum-flowers. Men are not ashamed to assume to themselves the easy and commodious occupations, and to leave to the poor women, the rougher and more laborious. We have female dealers in cattle, in pigs, driving through fairs on horseback: there are others who vend bricks, and navigate barges, quite embrowned with the sun; some labour in quarries.

We meet multitudes, in Paris, sweating under an enormous load of linen, under heavy water-pails, blacking shoes on the quays; others yoked,
like

like beasts, to little carts. Thus the sexes unsex themselves; the men dwindle into females, the women harden into men. The greatest part of females, in truth, would rather turn their charms to account than their strength. But what mischief is every day produced by women of the town! What conjugal infidelity, what domestic plunder, what quarrelling, beating, duelling, do they occasion! Scarcely has night begun to spread her curtain, when every street is inundated with them; every place of resort swarms with these unhappy creatures; at every corner they lie in wait for their prey. Others of them, known by the name, now of some consideration among the vulgar, of *kept mistresses*, loll it away to the opera and play-house, in magnificent equipages. They take the lead, at the balls and festivals of the better sort of our trades-folks. For them, in part, arise in the suburbs, in the midst of gardens in the English taste, gay alcoves in the Egyptian stile. Every one of them bent on melting down a fortune. It is thus GOD punishes the oppressors of a People, by the oppressed. While the rich are dreaming that they are expending their substance in tranquillity, men springing from the dregs, plunder them in their turn by the torments of opinion: if they are so fortunate as to escape these, fall they must into the hands of abandoned women; who, if they should happen to miss the fathers, make
sure

sure of indemnifying themselves upon the children.

An attempt has been made, for some years past, to give encouragement to virtue, in our poor country girls, by festivals called *Rosieres* (rose-feasts); for as to those who are rich, and our city dames in business, the respect which they owe to their fortune, permits them not to put themselves on a level with the female peasantry, even at the foot of the altar. But you who bestow crowns on virtue, are you not afraid of blighting the prize by your touch? Know you not, that among Nations who really honoured virtue, the Prince only, or the voice of the Country, presumed to confer the crown? The pro-consul *Apronius* refused the civic crown to a soldier who had merited it, because he considered this privilege as belonging only to the Emperor. *Tiberius* bestowed it, finding fault with *Apronius* for not having done it, in quality of Pro-consul*. Have you been informed in what respect virginity was held among the Romans? The Vestals had the maces of the Prætors borne before them. We have mentioned, on a former occasion, that their presence, merely, bestowed a pardon on the criminal going to execution, provided, however, the Vestals could affirm,

* *Annals of Tacitus*, book iii. year 6.

that

that they did not pass that way expressly for the purpose. They had a particular bench allotted them at the public festivals; and several Emperesses requested, as the highest honour they could aspire to, permission to sit among them. And our Paris trades-people, too, crown our rustic Vestals*! Noble and generous effort! They bestow a garland of roses upon indigent virtue, in the country; while, in the city, vice flaunts about glittering with diamonds.

On the other hand, the punishments of guilt appear to me as injudiciously adjusted as the rewards of virtue. We too frequently hear called aloud in our streets these terrible words, *The sentence of condemnation!* but never, *The sentence of reward.* Crimes are repressed by infamous punishments. A simple brand inflicted, instead of reforming the criminal, frequently plunges him deeper in guilt, and not seldom drives his whole family headlong into vicious courses. Where, let me ask, can an unhappy wretch find refuge, who has been publicly whipped, branded, and drummed out? Necessity has made him a thief; indignation and despair will hurry him on to murder.

* They *condescend*, likewise, to permit them to eat at the same table with themselves, for that day. See the journals of the festivity, which break out into raptures on this occasion.

His

His relations, dishonoured in the public estimation, abandon their home, and become vagabonds. His sisters give themselves up to prostitution.

These effects of the fear, which the hangman impresses on the lower orders, are considered as prejudices which are salutary to them. But they produce, as far as I am able to judge, unspeakable mischief. The vulgar extend them to actions the most indifferent, and convert them into a bitter aggravation of misery. Of this I witnessed an instance on board a vessel, in which I was a passenger, on my return from the Isle of France. I observed that not one of the sailors would eat in company with the cook of the ship; they hardly deigned even to speak to him. I enquired the reason of this at the Captain. He told me, that being at Pégú, about six months before, he had left this man on shore, to take charge of a warehouse which the people of the country had lent him. When night came on, these people locked the door of it, and carried home the key with them. The store-keeper being on the inside, and not having it in his power to go out to disburthen nature, was under the necessity of easing himself in a corner. Unfortunately, this warehouse was likewise a church. In the morning the proprietors came and opened the door; but observing that

the place was polluted, they fell upon the poor store-keeper, with loud exclamations, bound him fast, and delivered him over to the executioner, who would have immediately hanged him, unless the Captain of the vessel, seconded by a Portuguese Bishop and the King's brother, had hastened to interpose in his behalf, and saved him from the gallows. From that moment, the sailors considered their countryman as degraded, from having passed, as they alleged, through the hands of the hangman.

This prejudice did not exist among either the Greeks or Romans. There are no traces of it among the Turks, the Russians, and the Chinese. It does not proceed from a sense of honour, nor even from the shame of guilt; it is attached only to the species of punishment. The decapitation of a man for the crimes of treason and perfidy, or being shot for desertion, are considered as no stigma on the family of the person thus punished. The people, sunk below their level, despise that only which is peculiar to themselves, and shew no pity in their decisions, because they are miserable.

The wretchedness of the lower orders is, therefore, the principal source of our physical and moral maladies. There is another, no less fertile in mischief, I mean the education of children. This branch of
political

political economy engaged, among the Ancients, the attention of the greatest Legislators. The Persians, the Egyptians, and the Chinese, made it the basis of their Government. On this foundation *Lycurgus* reared the fabric of the Spartan Republic. We may even go so far as to affirm, that wherever there is no national education, there is no durable legislation. With us, education has no manner of reference to the constitution of the State. Our most celebrated Writers, such as *Montagne*, *Fenelon*, *John James Rousseau*, have been abundantly sensible how defective our police is, in this respect : but despairing, perhaps, of effecting a reformation, they have preferred offering plans of private and domestic education, to patching up the old method, and adapting it to all the absurdities of the present state of Society. For my own part, as I am tracing up our evils to their source, only in the view of exculpating Nature, and in the hope that some favoured genius may one day arise to apply a remedy, I find myself farther engaged, to examine into the influence of education on our particular happiness, and on that of our Country in general.

Man is the only sensible being who forms his reason on continual observations. His education begins with life, and ends only with death. His days would fleet away in a state of perpetual un-

certainly, unless the novelty of objects, and the flexibility of his brain gave, to the impressions of his early years, a character not to be effaced. At that period of life are formed the inclinations and the aversions which influence the whole of our existence. Our first affections are likewise the last. They accompany us through the events with which human life is variegated. They re-appear in old age, and then revive the sensibilities of childhood with still greater force than those of mature age. Early habits have an influence even on animals, to such a degree, as to extinguish their natural instinct. *Lycurgus* exhibited a striking example of this to the Lacedemonians, in the case of two hounds taken from the same litter, in one of which education had completely triumphed over Nature. But I could produce still stronger instances in the Human Species, in which early habit is found triumphant, sometimes, even over ambition. History furnishes innumerable examples to this purpose; I beg leave to produce one which has not yet obtained a place in the historic page, and which is, apparently, of no great importance, but is highly interesting to myself, because it brings to my recollection persons who were justly dear to me.

When I was in the Russian service, I frequently had the pleasure of dining at the table of his
Excellency

Excellency M. *de Villebois* *, Grand Master of Artillery, and General of the corps of engineers to which I belonged. I observed that there was every

* *Nicolas de Villebois* was a native of Finland, but descended from a French family originally from Brittany. In the battle of Francfort, he turned the tide of victory decidedly in favour of Russia, by charging the Prussians at the head of a regiment of fusileers of the artillery, of which he was then Colonel. This action, joined to his personal merit, procured him the blue ribbon of St. Andrew, and soon after the place of Grand Master of the Ordnance, which he held at the time of my arrival in Russia. Though his credit was then on the decline, he procured me an admission into the service of her Imperial Majesty *Catharine* II. and did me the honour of presenting me to her as one of the officers of his corps of engineers. He was making arrangements, in concert with General *Daniel de Bosquet*, Commander in Chief of the corps of engineers, for my farther promotion in it. They both employed all their powers of persuasion to retain me in that service, and endeavoured to render it agreeable by every affectionate and polite attention, and by assurances of an honourable and advantageous establishment. But the love which I bore to my country, in whose service I had previously engaged, and to which I still wished to devote my services, a fond wish, fed with vain hopes, by men of very high character, induced me to persist in demanding my dismissal, which I obtained, with Captain's rank, in 1765.

On leaving Russia, I made an effort to serve my country, at my own expence, by joining that party in Poland which France had espoused. There I was exposed to very great risks, having been made prisoner by the Polonese-Russian party. On my return to Paris, I presented memorials respecting the state of things in the North, to the Minister for Foreign Affairs, in

every day served up to him a plate of something gray-coloured, I could not tell what, and similar, in form, to small pebbles. He ate very heartily of this dish, but never presented it to any one at table; though his entertainments were always given in the most elegant style, and every other dish indiscriminately recommended to his guests, of whatever rank. He one day perceived me looking attentively at his favourite morsel; and asked, with a smile, if I would please to taste it. I accepted his offer, and found that it consisted of little balls of curdled milk, salted, and besprinkled with anise-seeds, but so hard and so tough, that it cost me inexpressible exertion to force my teeth through them, but to swallow them down, was absolutely impossible.

“ These are,” said the Grand Master to me,
 “ the cheeses of my native country. It is a taste
 “ which I acquired in my boyish days. I was ac-
 “ customed, when a child, to feed with the pea-

which I predicted the future partition of Poland, by the Powers contiguous. This partition actually took place some years afterward. I have since endeavoured to deserve well of my country by my services, both military, in the West-Indies, in my capacity of Captain of the royal engineers, and literary, in France, and I add, with confidence, by my conduct likewise: but I have not, hitherto enjoyed the felicity of experiencing, in my fortune, that she has been pleased graciously to accept the various sacrifices which I saw it my duty to make to her.

fants

“fants on these coarse milk beverages. When I
 “am travelling, and have got to a distance from
 “great towns, on coming near a country village,
 “I fend on my servants and carriages before;
 “and then my great delight is to go unattended,
 “and carefully muffled up in my cloak, into the
 “house of the first peasant on the road, and de-
 “vour an earthen pot-full of curdled milk, stuffed
 “full of brown bread. On my last journey into
 “Livonia, on one of these occasions, I met with
 “an adventure, which amused me very highly.
 “While I was breakfasting in this style, in comes
 “a man singing cheerly, and carrying a parcel on
 “his shoulder. He sat down by me, and desired
 “the landlord to give him a breakfast such as
 “mine. I asked this traveller so gay, whence he
 “came, and which way he was going. *I am a*
 “*sailor, says he, and just arrived from a voyage to*
 “*India; I disembarked at Riga, and am on my re-*
 “*turn to Herland, which is my native country, where*
 “*I have not been these three years. I shall stay*
 “*there till I have spent these hundred crowns, pul-*
 “*ling out a leathern bag, and chinking the mo-*
 “*ney. I asked him several questions about the*
 “*countries he had seen, which he answered very*
 “*pertinently. But, said I to him, what will you*
 “*do, when your hundred crowns are gone?—Oh!*
 “*says he, I will return to Holland, embark again*
 “*for India, earn another bag of crowns, come back*

“ *and enjoy myself in Herland, in Franconia, my native country.*” The good humour and thoughtlessness of this fellow diverted me exceedingly,” continued the Grand Master. “ To confess the truth, I envied his situation.”

Wife Nature, in giving so much force to early habits, intended that our happiness should depend on those, who are most concerned to promote it, that is, our parents; for on the affections which they, at that season, inspire, depends the affection which we are one day to be called upon to return. But, with us, as soon as the child is born, he is transferred to a mercenary nurse. The first bond which Nature intended should attach him to his parents, is burst asunder before it is formed. The day will come, perhaps, when he will behold the funeral procession of those who gave him birth, leave his father's door, with as much indifference as they saw his cradle turned out. He may be recalled home, it is true, at the age when the graces, when innocence, when the necessity of having an object of affection should fix him there for ever. But he is permitted to taste those sweets, only to make him feel, in a little while, the bitterness of having them taken away from him. He is sent to school; he is put to board far from home. There he is doomed to shed tears which no maternal hand is ever more to wipe away. It is there he is
to

to form friendships with strangers, pregnant with regret and repentance ; and there he must learn to extinguish the natural affections of brother, of sister, of father, of mother, which are the most powerful, and the sweetest chains by which Nature attaches us to our Country.

After this first horrid outrage committed on his young heart, others equally violent are offered to his understanding. His tender memory must be loaded with ablatives, with conjunctions, with conjugations. The blossom of human life is sacrificed to the metaphysical jargon of a dead language. What Frenchman could submit to the torture of learning his own in that manner ? And if there be those who have exercised such laborious patience, do they speak better than persons who have never endured such drudgery ? Who writes best, a lady of the Court, or a pedantic grammarian ? *Montagne*, so replenished with the ancient beauties of the Latin tongue, and who has given so much energy to our own, congratulates himself on *never having understood what the word vocative meant*. To learn to speak by grammar rules, is the same thing with learning to walk by the laws of equilibrium. It is practice that teaches the grammar of a language, and the passions are our best instructors in the rhetoric of it. It is only at the age, and in places where they expand, that
the

the beauties of *Virgil* and *Horace* are felt, a thing which our most celebrated college translators never dreamt of.

I recollect that when I was at school, I was for a long time stunned, as other boys are, by a chaos of barbarous terms; and that, when I happened to catch a glimpse, in the Author I was studying, of any stroke of genius which met my reason, or any sentiment which made it's way to my heart, I kissed the book for joy. It filled me with astonishment to find that the Ancients had common sense. I imagined that there must be as great a difference between their reason and mine, as there was in the construction of our two languages. I have known several of my school-fellows so disgusted at Latin Authors, by those college explanations, that, long after they had bidden farewell to the seminary, they could not bear to hear their names mentioned. But when they came to be formed by acquaintance with the world, and by the operation of the passions, they became perfectly sensible of their beauties, and resorted to them as the most delightful of all companions. It is thus that children, with us, become stupified; and that an unnatural constraint is used to repress a period of life all fire and activity, transforming it into a state, sad, sedentary, and speculative, which has a dismal influence on the temperament, by ingraft-
ing

ing maladies without number upon it. But these, after all, amount only to the production of languor, and physical evils. But they are trained to vice; they are decoyed into ambition under the guise of emulation.

Of the two passions which are the moving principles of the human heart, namely, love and ambition, the last is by far the most durable, and the most dangerous. Ambition is the last that dies in the aged, and our mode of education puts it prematurely in motion in the young. It would be infinitely better to assist them in directing their early tender affections toward an amiable object. Most are destined, one time or another, to feel the power of this gentle passion. Nature has, besides, made it the firmest cement of Society. If their age, or, rather, if our financial manners forbid a commerce of early love, their young affections ought to be directed into the channel of friendship, and thus, as *Plato* proposes in his Republic, and as *Pelopidas* effected at Thebes, battalions of friends might be formed among them, at all seasons prepared to devote themselves in the service of their Country*.

But

* *Divide & impera* (divide and govern) is a saying, I believe, of *Machiavel's*. Judge of the goodness of this maxim, from the miserable

But ambition never rises except at the expense of another. Give it whatever specious name you please, it is ever the sworn enemy of all virtue. It is the source of vices the most dangerous and detestable; of jealousy, of hatred, of intolerance, and cruelty; for every one is disposed to gratify it in his own way. It is forbidden to all men by Nature and Religion, and to the greatest part of subjects by Government. In our colleges, a lad is brought up to empire, who must be doomed, for life, to sell pepper. The young people, the hope of a great Nation, are there employed, for, at least, seven years, in learning to be the first in the art of declamation, of versification, of prat-

miserable state of the country which gave it birth, and where it has been reduced into practice.

Children, at Sparta, were taught only to obey, to love virtue, to love their country, and to live in the most intimate union, till they were divided in their schools into two classes, of *Lovers* and *Beloved*. Among the other Nations of Greece, education was arbitrary; it consisted of a great variety of exercises, of eloquence, of wrestling, of running, of pythian, of olympic, of isthmian prizes, &c. These frivolities fostered undue partialities. Lacedemon gave Law to them all: and while the first, on going to engage in the battles of their country, needed the stimulus of pay, of harangues, of trumpets, of clarions, to excite their courage, it was necessary, on the contrary, to repress the ardor of the Lacedemonians. They went to battle, unstimulated by mercenary considerations, by eloquent addresses, to the sound of the flute, and singing in one grand concert, the hymn of the two twin brothers, *Castor* and *Pollux*.

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ting. For one who succeeds in these trivial pursuits, how many thousands lose, at once, their health and their Latin !

It is emulation, we are told, which awakens talents. It would be an easy task to demonstrate, that the most celebrated Writers, in every walk of literature, never were brought up at college, from *Homer*, who was acquainted with no language but his own, down to *John James Rousseau*, who was a very indifferent Latin scholar. How many young men have made a brilliant figure in the run of the classes, who were by and by totally eclipsed in the vast sphere of Literature ! Italy is crowded with colleges and academies ; but can she boast, at this day, of so much as one man eminently distinguished ? Do we not see there, on the contrary, talents distracted, by ill-assorted societies, by jealousies, by cabals, by intrigues, and by all the restlessness of ambition, become enfeebled, and melt away ?

I think I am able to perceive still another reason of this decline ; it is, that nothing is studied in those seminaries but the methods and forms of learning, or what, in the Painter's phrase, is called *manner*. This study, by fixing us in the track of a master, forces us out of the path of Nature, which is the source of all talents. Look to France,
and

and observe what are the arts brought there to the highest perfection; and you will find that they are those for which there is no public school, no prize, no academy: such as milliners, jewellers, hair-dressers, cooks, &c. We have, it is true, men of high reputation in the liberal arts, and in the sciences; but these men had acquired their talents before they were introduced into academies. Besides, will any one venture to affirm, that they are equal to those of preceding ages, who appeared before academies existed? After all, admitting that talents are formed in colleges, they would not for that be less prejudicial to the Nation; for it is of inconceivably more importance that a Country should possess virtue rather than talents, and men happy, rather than men renowned. A treacherous glare covers the vices of those who succeed in our Colleges. But in the multitude who never succeed, secret jealousies, malicious whispers, mean flatteries, and all the vices of a negative ambition are already in a state of fermentation, and ready to burst forth, at the command of their leader, upon the World.

While depravity is thus taking possession of the hearts of children, some branches of education go directly to the perversion of their reason. These two abuses always walk hand in hand. First, they are taught to deduce false consequences. The

Regent

Regent informs them that *Jupiter*, *Mercury*, and *Apollo*, are gods : the Parish-minister tells them that they are demons. The professor assures his pupil, that *Virgil*, who has so nobly supported the doctrine of a Providence, is got at least to the Elysian Fields, and that he enjoys in this world the esteem of all good men : The Curé informs him, that this same *Virgil* was a pagan, and must certainly be damned. The Gospel holds a contradictory language, in another respect ; it recommends to the young man to be the last ; his college urges him by all means to be the first : virtue commands him to descend ; education bids him rise. And what renders the contradiction still more glaring to the poor lad, it frequently proceeds, especially in the country, from one and the same mouth : for the same good Ecclesiastic, in many places, teaches the classics in the morning, and the catechism at night.

I can very easily conceive how the matter may be arranged, and contradictions reconciled, in the head of the Regent ; but they must of necessity confound and perplex all the ideas of the Learner, who is not paid for comprehending, as the other is, for retailing them.

The case is much worse, when subjects of terror are employed, where nothing ought to be administered

niftred but confolation : when application is made to them, for example, at the age of innocence, of the woes pronounced by JESUS CHRIST, againft the Pharifees, the doctōrs, and the other tyrants of the Jewifh nation ; or when their tender organs are fhocked by certain monftrous images fo common in our churches. I knew a young man who, in his infancy, was fo terrified with the dragon of St. Marguerite, with which his preceptor had threatened him in the village-church, that he actually fell fick of horror, believing that he faw the monfter constantly at his pillow, ready to devour him. His father, in order to quiet his difturbed imagination, was under the neceffity of appearing fword in hand to attack the dragon, and of pretending that he had killed him. Thus, as our method is, one error was driven out by another. When grown up, the firft ufe which he made of his reafon was to refleét, that the perfons intrufted with the formation of that faculty, had impofed upon him twice.

After having elevated a poor boy above his equals, by the title of Emperor, and even above the whole Human Race, by that of Son of the Church, he is cruelly brought low by rigorous and degrading punifhments. “ Among other things,” fays *Montagne* *, “ that part of the police of moft of our

* *Effays*, book i. chap. 25.

fchools,

“ schools has always given me much offence.
 “ They ought, at all hazards, certainly with much
 “ less disadvantage, to have adopted the extreme
 “ of indulgence. Youth immured presents the
 “ most horrid of all gaols. To punish a child be-
 “ fore he is debauched, is an infallible method to
 “ debauch him. If you happen to pass when the
 “ lesson is delivering, you hear nothing but the
 “ cries of poor children undergoing chastisement,
 “ and the storming of masters intoxicated with
 “ rage. What a method to inspire with the love
 “ of learning, those tender and timid spirits, to
 “ drive them to it with furl looks, and birchen-
 “ armed hand ! Unjust, pernicious proceeding !
 “ Add to this, what *Quintilian* has well remarked
 “ on the subject, that this imperious authority is
 “ pregnant with the most dangerous consequences,
 “ particularly from the mode of chastisement.
 “ How much more decent an appearance would
 “ their classes exhibit, strewed with flowers and
 “ verdant boughs, than with the fragments of
 “ bloody rods ! I would have portrayed in them,
 “ Joy, Gaiety, Flora, the Graces, as the Philoso-
 “ pher *Speusippus* had in his school. Where should
 “ their improvement be looked for, but where
 “ their pleasure is * ?”

* *Michael Montagne* is, likewise, one of those men who were
 not educated at college ; the time of his continuance there, at

I have seen, at college, many a pretty creature ready to fall into a swoon with pain, receive on their little hands, up to a dozen of sharp strokes. I have seen, by the infliction of this punishment, the skin separated from the tip of their fingers, and the bare flesh exposed. What shall be said of those infamous punishments, which produce a disgraceful effect, at once, on the morals of both scholars and regents, and of which a thousand examples might be adduced? It is impossible to enter into any detail, on this subject, without putting modesty to the blush. And yet they are employed by priests. They rest on a passage from *Solomon's* writings, of this import, "He that spareth the rod
" hateth the child." But who knows whether the Jews themselves practised corporal punishment after our fashion? The Turks, who have retained a great part of their usages, hold this in detestation. It has been diffused over Europe only by the corruption of the Greeks of the Lower Empire, and it was introduced there by the Monks. If the Jews actually employed it, who can tell but their

least, was very short. He was instructed without tasting corporal punishment, and without emulation, under the paternal roof, by the gentlest of fathers, and by preceptors whose memory he has preciousy embalmed in his writings. He became, by means of an education so diametrically opposite to ours, one of the best, and one of the most intelligent men of the Nation.

ferocity

ferocity might proceed from this part of their education ?

Besides, there are in the Old Testament many advices never intended for our use. We find in it passages of very difficult explication, examples dangerous, and laws impracticable. In *Leviticus*, for example, the use of swine's flesh is prohibited. It is represented as a crime worthy of death, to violate the Sabbath-day, by working upon it; that of killing an ox * without the camp is forbidden under a like punishment, &c. St. *Paul*, in his Epistle to the Galatians, says positively, that the Law of *Moses* is a Law of servitude ; he compares it to the slave *Hagar*, whom *Abraham* repudiated. Whatever respect may be due to the Writings of *Solomon*, and to the Laws of *Moses*, we are not their disciples, but the disciples of *HIM*, who said, “ suffer little children to come to Me ; “ forbid them not ;” who blessed them, and said that in order to enter into the kingdom of Heaven, we must become like them.

Our children, subverted by the vices of a faulty education, become false reasoners, knavish, hypo-

* In what part of the Mosaic Institution, could our Author possibly find this penal statute ? It is, surely, unnecessary to give infidelity a groundless triumph.

H. H.

critical, envious, ugly, and wicked. In proportion as they increase in age, they increase also in malignity, and the spirit of contradiction. There is not a single school-boy who knows any thing of the laws of his Country, but there are some who may have heard talk about those of the Twelve Tables. No one of them can tell how our own wars are conducted; but many are able to entertain you with some account of the wars of the Greeks and Romans. Not one of them but knows that single combat is prohibited; and many of them go to the fencing-schools, where the only thing taught is to fight duels. They are sent thither, we are told, merely to learn a graceful carriage, and to walk like gentlemen; as if a gentleman must walk in the positions of *tierce* and *quarte*, and as if the gait and attitude of a citizen ought to be that of a gladiator.

Others, destined to functions more peaceful, are put to school to learn the art of disputation. Truth, they gravely tell us, is struck out of the collision of opinions. There may be something like wit in the expression. But for my own part, I should find myself incapable of distinguishing truth, if I met with her in the heat of a dispute. I should suspect that I was dazzled either by my own passion, or that of another man. Out of disputations have arisen sophisms, heresies, paradoxes, errors

errors of every kind. Truth never shews her face before tyrants ; and every man who disputes would be a tyrant if he could. The light of truth has no resemblance to the fatal coruscations of the thunder, produced by the clashing of the elements, but to the brightness of the Sun, which is perfectly pure only when Heaven is without a cloud.

I shall not follow our youth into the World, where the greatest merit of ancient times could be of no manner of service to him. What should he make of his magnanimous republican sentiments under a despotism ; and of those of disinterestedness in a country where every thing is bought and sold ? What use could he make even of the impassible philosophy of a *Diogenes*, in cities where beggars are taken up, and sent to the house of correction ? Youth would be sufficiently unhappy, even supposing it to have preserved only that fear of blame, and that desire of commendation, under which it's studies were conducted. Influenced from first to last by the opinion of another, and having in itself no steady principle, the silliest of women will rule over him with more unbounded empire than his professor. But, let us say what we will, the colleges will be always full. All I pretend to plead for is, that children should be delivered, at least, from that tedious apprenticeship to misery, by which they are depraved, at the

happiest and most amiable period of their existence, and which has afterward so much influence on their characters. Man is born good. It is society that renders him wicked; and our mode of education prepares the way for it.

As my testimony is not of sufficient weight to bear out an assertion of so much importance, I shall produce several which are not liable to suspicion, and which I shall extract at random from the Writings of Ecclesiastics, not in conformity to their opinions, which are dictated by their condition, but resulting from their personal experience, which, in this respect, absolutely deranges their whole theory.

Here is one from Father *Claude d'Abbeville*, a Capuchin Missionary, on the subject of the children of the inhabitants of the Island of Maragnan, on the coast of Brasil; where we had laid the foundations of a colony, whose fate has been similar to that of so many others, which have been lost by our want of perseverance, and by our unhappy divisions, the usual and natural consequence of injudicious education. “Farther, I know not
“whether it be from the singular affection which
“fathers and mothers here bear to their children,
“but certain it is, they never say a word which
“can possibly give them the slightest uneasiness;
“they

“ they are left at perfect liberty to do just what
 “ they please, and to take their own way in every
 “ case, without any apprehension of reproof what-
 “ ever. It is, accordingly, a most astonishing ap-
 “ pearance, and what has often excited admira-
 “ tion in myself, and many others,” (and with
 good reason) “ the children hardly ever do any
 “ thing that can displease their parents; on the
 “ contrary, they are at pains to do every thing
 “ which they know, or imagine, will be agree-
 “ able to them *” He afterwards presents a very
 favorable portrait of their physical and moral
 qualities.

His testimony is confirmed by *John de Lery*, as far as it respects the Braſilians, whose manners are the same, and who are in the near neighbourhood of that island. I beg leave to produce another, that of *Anthony Biet*, Superior of the Missionary Priests, who, in the year 1652, went over to Cayenne, another colony lost to us from the same causes, and since indifferently settled. It is on the subject of the children of the Galibis Savages †.

* History of the mission of Capuchin Fathers to the Island of Maragnan, chap. xlvii.

† Voyage to the Equinoctial Countries, book iii. page 390.

“ The mother takes great delight in nursing her
 “ child. There is no such thing known among
 “ them as giving out their children to be nursed
 “ by a stranger. They are fond of their children
 “ to excess. They bathe them regularly every
 “ day in a fountain or river. They do not swaddle
 “ them, but put them to sleep in a little bed of
 “ cotton, made expressly for the purpose. They
 “ always leave them quite naked : their progress
 “ in growth is perfectly wonderful ; some are able
 “ to walk alone at the age of eight or nine months.
 “ When grown to a certain age, if they are inca-
 “ pable of walking upright, they march along on
 “ their hands and feet. Those people love their
 “ children to distraction. They never chide nor
 “ beat them, but permit them to enjoy perfect li-
 “ berty ; which they never abuse by doing any
 “ thing to vex their parents. They express great
 “ astonishment, when they see any of our people
 “ correct their children.”

Here is a third, extracted from the work of a
 Jesuit, I mean Father *Charlevoix*, a man of various
 and extensive learning. It is a passage from his
 Voyage to New Orleans, another colony which we
 have suffered to fall to nothing, through our divi-
 sions, a consequence of our moral constitution, and
 of our system of education. He is speaking, in
 general,

general, of the children of the Savages of North-America.

“ Sometimes, * as the means of correcting their
 “ faults, they employ prayers and tears, but never
 “ threatenings....A mother, who sees her daughter
 “ behave improperly, falls a crying. The daughter
 “ naturally asks what is the matter with her, and
 “ she satisfies herself with replying, *You dishonour*
 “ *me*. This mode of reproof seldom fails to pro-
 “ duce the effect intended. Since, however, they
 “ have had a little more commerce with the
 “ French, some of them begin to chastise their
 “ children; but scarcely any except among those
 “ who are *Christians*, or who are fixed in the co-
 “ lony. The severest punishment usually inflicted
 “ by the Savages, for correcting their children, is
 “ to throw a little water in their face.....Young
 “ women have been known to hang themselves,
 “ for having received from a mother some slight
 “ reprimand, or a few drops of water thrown in
 “ the face; after giving warning of what they were
 “ going to do, in these words, *You shall no longer*
 “ *have a daughter.*”

It is very amusing, to observe the embar-
 rassment of this Author, in attempting to recon-

* Historical Journal of North-America. Lett. xxiii. Aug. 1721.
 cile

cile his European prejudices with his remarks as a traveller; which produces perpetual contradictions in the course of his Work. "It would seem," says he, "that a childhood so badly disciplined, must be succeeded by a very turbulent and very corrupted youth." He admits that reason directs those people earlier than it does other men; but he ascribes the cause of it to their temperament, which is, as he alleges, more tranquil. He recollects not the pathetic representations which he himself has exhibited of the scenes that their passions present, when they expand and exalt themselves in the bosom of peace, in their national assemblies, where their harangues leave all the art of our Orators far behind, as to justness and sublimity of imagery; or amidst the fury of war, where they brave, in the face of fire and faggots, all the rage of their enemies. He does not choose to see, that it is our European education which destroys our temper, for he acknowledges, in another place, that these same Savages, brought up after our manner, become more wicked than others. There are passages in his Work, in which he presents the most affecting eulogium of their morality, of their amiable qualities, and of their happy life. He sometimes seems to envy their condition.

Time

Time permits me not to give at large those different passages that may be read in the Book from which the above extract is made, nor to produce a multitude of other testimonies, respecting the different Nations of Asia, which demonstrate the perceptible influence that gentleness of education has on the physical and moral beauty of mankind, and which must be, in every political constitution, the most powerful bond of union among the members of the State.

I shall conclude these foreign authorities by a touch which good *John James Rousseau* could not have given with impunity, and which is extracted word for word from the work of a Dominican; I mean the agreeable History of the Antilles, by Father *du Tertre*, a man replete with taste, with good sense, and humanity. Hear what he says of the Caraïbs, whose education resembles that of the Nations which I have been describing*.

“ On mentioning the word Savage,” says he,
 “ most people will figure to themselves a species of
 “ men, barbarous, cruel, inhuman, destitute of
 “ reason, deformed, tall as giants, hairy like bears;
 “ in a word, rather monsters than rational beings ;

* Natural History of the Antilles, vol. ii. treatise vii. chap. i. sect. 1.

“ though

“ though, in truth, our Savages are such only in
 “ name, just as the plants and the fruits which
 “ Nature produces without culture in forests and
 “ deserts ; for these too we denominate wild or
 “ savage, though they possess the real virtues and
 “ properties in their native force and vigor, which
 “ we frequently corrupt by art, and cause to de-
 “ generate by transplantation into our gardens....
 “ It is of importance,” adds he afterwards, “ to
 “ demonstrate in this treatise, that the Savages in
 “ these islands, are the most content, the happiest,
 “ *the least vicious*, the most sociable, the least de-
 “ formed, and the least tormented by disease of
 “ any people in the world.”

If we trace among ourselves the history of a vil-
 lain's life, we shall find that his infancy was always
 very miserable. Wherever I have found children
 unhappy, I always observed they were wicked and
 ugly ; and wherever I saw them happy, there
 likewise they were beautiful and good. In Hol-
 land and Flanders, where they are brought up
 with the greatest gentleness, their beauty is singular-
 ly remarkable. It is from them that the famous
 sculptor, *Francis* the Flemish, borrowed his charm-
 ing models of children ; and *Rubens* that freshness
 of colouring which glows on those of his pictures.
 You never hear them, as in our cities, uttering
 loud and bitter cries ; still less do you hear them
 threatened

threatened with the rod by their mothers and nurses, as with us. They are not gay, but they are contented. You observe on their countenance an air of tranquility and satisfaction which is perfectly enchanting, and infinitely more interesting than the boisterous mirth of our young people when they are no longer under the eye of their fathers or preceptors.

This calmness is diffused over all their actions, and is the source of a happy composure which characterizes their whole future life. I never saw any country where parental tenderness was so strikingly expressed. The children, in their turn, repay them, in their old-age, the indulgence with which they were treated in helpless infancy. By bonds so endearing are these people attached to their country, and so powerfully that we find very few of them settling among strangers. With us, on the contrary, fathers like better to see their children sprightly than good, because in a constitution of ambitious society, spirit raises a man to the head of a party, but goodness makes dupes. They have collections of epigrams composed by their children; but wit being only the perception of the relations of society, children scarcely ever have any but what is borrowed. Wit itself is frequently, in them, the proof of a miserable existence, as may be remarked in the school-boys of our cities, who usually are spright-
lier

lier than the children of the peasantry ; and in such as labour under some natural defect, as lameness, hunch-backedness, and the like, who, in respect of wit, are still more premature than others. But, in general, they are all exceedingly forward in point of feeling ; and this reflects great blame on those who degrade them, at an age when they frequently feel more delicately than men.

Of this I shall produce some instances, calculated to demonstrate that, notwithstanding the defects of our political constitutions, there still exist, in some families, good natural qualities, or well-informed virtues, which leave, to the happy affections of children, the liberty of expanding.

I was at Dresden, in 1765, and happened to go to the Court-Theatre : the piece performed was *The Father*. In came the Electress, with one of her daughters, who might be about five or six years of age. An officer of the Saxon guards, who had introduced me, said in a whisper, “ That child will “ interest you much more than the play.” In fact, as soon as she had taken her seat, she rested both hands on the front of the box, fixed her eyes on the stage, and remained, with open mouth, immoveably attentive to the performers. It was a truly affecting exhibition ; her face, like a mirror, reflected all the different passions which the drama
was

was intended to excite. You could see, in succession, depicted upon it, anxiety, surprize, melancholy, sorrow ; at last, as the interest increased from scene to scene, the tears began to trickle copiously down her little cheeks ; accompanied with shivering, sighing, sobbing : till it became necessary at length to carry her out of the box, for fear of her being stifled. My companion informed me, that as often as this young princess attended the representation of a pathetic piece, she was obliged to retire, before it came to the crisis.

I have witnessed instances of sensibility still more affecting, in the children of the common people, because they were not produced by any theatrical effect. As I was taking my walk, some years ago, through the Pré St. Gervais, about the setting-in of winter, I observed a poor woman, lying along the ground, employed in weeding a bed of sorrel ; close by her was a little girl, of six years old at most, standing, motionless, and quite impurpled with the cold. I addressed myself to the woman, who betrayed evident symptoms of indisposition, and enquired into the nature of her malady. “ Sir,” said she to me, “ for three months past, I have suffered very severely from the rheumatism ; but
“ my disease gives me much less pain than that
“ poor child : she will not quit me a single moment. If I say to her, see, you are quite be-
“ numbed

“ numbed with cold, go within doors and warm
“ yourself; she replies: alas! mother, if I leave
“ you, your complaints will be your only com-
“ panion.”

Another time, being at Marly, I went into that magnificent park, and amused myself in the woods with looking at the charming group of children who are feeding, with vine boughs and grapes, a she-goat which seems at play with them. At no great distance is an inclosed pavilion, where *Louis XV.* in fine weather, sometimes went to enjoy a collation. Being caught in a sudden shower, I went in for a few moments to shelter myself. I there found three children, who interested me much more than the children in marble without doors. They were two little girls, uncommonly handsome, employed with singular activity, in picking up, round the arbour, the scattered sticks of dry wood, which they deposited in a basket that stood on the King's table, while a little boy, all in ratters, and extremely lean, was devouring a morsel of bread in a corner. I asked the tallest, who might be about eight or nine years old, what she intended to do with that wood, which she was so busily collecting. She replied, “ Look, Sir, at
“ that poor boy, there; he is very miserable! He
“ is so unfortunate as to have a step-mother, who
“ sends him out, all day long, to pick up wood :
if

“ if he carries none home, he is beaten severely ;
“ when he happens to have got a little, and is carrying it off, the Swift at the park-gate takes it
“ from him, and applies it to his own use. He is
“ half dead with hunger, and we have given him
“ our breakfast.” Having thus spoken, she and her companion filled the little basket ; helped him up with it on his back, and run away before their unhappy friend to the gate of the park, to see if he could pass unmolested.

Foolish Instructors ! Human nature, you tell us, is corrupted : yes, but you are the persons who corrupt it by contradictions, by unprofitable studies, by dangerous ambition, by shameful chastisements : and by an equitable re-action of divine Justice, that feeble and unfortunate generation will one day give back to that which oppresses it, in jealousies, in disputes, in apathies, and in oppositions of tastes, of modes, and of opinions, all the mischief which it first received.

I have explained, to the best of my ability, the causes, and the re-actions of our evils, in the view of vindicating Nature from the charge of having produced them. I propose, at the close of this Work, to exhibit the palliatives and the remedies. They will, no doubt, prove vain and inefficient speculations : but if some Minister shall have the

courage, one day, to undertake to render the Nation internally happy, and powerful abroad, I can venture to predict, that this will be effected neither by plans of economy, nor by political alliances, but by reforming it's manners, and it's plan of education. He never will make good this revolution, by means of punishments and rewards, but by imitating the processes of Nature, who always carries her point by re-action. It is not to the apparent evil that the remedy must be applied, but to it's cause. The cause of the moral power of gold, is in the venality of public offices; that of the excessive superabundance of indolent tradesmen in our cities, is in the imposts which degrade the inhabitants of the country; that of the beggary of the poor, is in the overgrown property of the rich; that of the prostitution of young women, is in the celibacy of the men; that of the prejudices of the Nobility, in the resentments of the vulgar; and that of all the evils of society, in the torments inflicted on children.

For my own part, I have spoken out; and if I could have spoken to the Nation in one vast assembly, from some point of the Horizon where Paris is discernible, I would have pointed out to my Country, on the one part, the monuments of the rich; the thousands of voluptuous palaces in the suburbs, eleven theatres, the steeples of a
hundred

hundred and thirty-four convents, among which arise eleven wealthy abbeys; those of a hundred and sixty other churches, twenty of which are richly endowed chapters: and, on the other part, I would have pointed out the monuments of the wretched; fifty-seven colleges, sixteen courts of justice, fourteen barracks, thirty guard-houses, twenty-six hospitals, twelve prisons or houses of correction. I would have displayed the magnificence of the gardens, of the courts, of the greens, of the inclosures, and of the dependencies, of all these vast edifices, accumulated on a space of ground less than a league and a half in diameter. I would have demanded, whether the rest of the Kingdom is distributed in the same proportion as the Capital: where are the properties of those who supply it with food, with clothing, with the means of lodging, of those who defend it; and what, at last, is left for the multitude, to maintain citizens, fathers of families, and happy men? Oh! ye moral and political Powers, after having shewn you the causes and the effects of our evils, I would have prostrated myself at your feet, and would have expected, as the reward of truth, the same recompense which the peasant of the Danube expected from the insatiable powers of Rome*.

* As a sequel to this Study, may be read that which terminates the fourth Volume of this Work.

STUDY EIGHTH.

REPLIES

TO THE OBJECTIONS AGAINST A DIVINE PROVIDENCE,
AND THE HOPES OF A LIFE TO COME, FOUNDED ON
THE INCOMPREHENSIBLE NATURE OF GOD, AND
THE MISERIES OF A PRESENT STATE.

“ **W**HAT avails it me,” some one will say,
“ that my tyrants are punished, if I
“ am still to be the victim of tyranny? Is it pos-
“ sible that such compensations should be the
“ work of GOD? Great Philosophers, who have
“ devoted their whole life to the study of Nature,
“ have refused to acknowledge it’s Author. Who
“ hath seen GOD at any time? What is it that
“ constitutes GOD? But taking it for granted
“ that an intelligent Being directs the affairs of
“ this Universe, Man assuredly is abandoned to
“ himself: no hand has traced his career: as far
“ as he is concerned, there are, apparently, two
“ Deities; the one inviting him to unbounded
“ enjoyment, and the other dooming him to end-

“ less privation ; one God of Nature, and another
“ God of Religion. He is totally uncertain whe-
“ ther of the two he is bound to please ; and
“ whatever be the choice which he is determined to
“ make, how can he tell whether he is rendering
“ himself an object of love or of hatred ?

“ His virtue itself fills him with doubts and
“ scruples ; it renders him miserable, both in-
“ wardly and outwardly ; it reduces him to a state
“ of perpetual warfare with himself, and with the
“ world, to the interests of which he is obliged
“ to make a sacrifice of himself. If he is chaste,
“ the world calls him impotent ; if he is religious,
“ he is accounted silly ; if he discovers benignity
“ of disposition to those around him, it is because
“ he wants courage ; if he devotes himself for the
“ good of his country, he is a fanatic ; if he is
“ simple, he is duped ; if he is modest, he is sup-
“ planted ; he is every where derided, betrayed,
“ despised, now by the philosopher, and now by
“ the devotee. On what foundation can he build
“ the hope of a recompense for so many struggles
“ and mortifications ? On a life to come ? What
“ assurance has he of it's existence ? Where is the
“ traveller that ever returned from thence ?

“ What is the soul of man ? Where was it a
“ hundred years ago ? Where will it be a century
“ hence ?

“ hence ? It expands with the senses, and expires
 “ when they expire. What becomes of it in sleep,
 “ in a lethargy ? It is the illusion of pride to ima-
 “ gine that it is immortal : Nature universally
 “ points to death, in his monuments, in his appe-
 “ tites, in his loves, in his friendships : man is
 “ universally reduced to the necessity of drawing
 “ a veil over this idea. In order to live less mi-
 “ serable, he ought to *divert* himself, that is, as
 “ the word literally imports, he ought to *turn aside*
 “ from that dismal perspective of woes which Na-
 “ ture is presenting to him on every side. To what
 “ hopeless labours has she not subjected his mis-
 “ erable life ? The beasts of the field are a thou-
 “ sand times happier ; clothed, lodged, fed by the
 “ hand of Nature, they give themselves up with-
 “ out solicitude to the indulgence of their pas-
 “ sions, and finish their career without any pre-
 “ timent of death, and without any fear of an
 “ hereafter.

“ If there be a GOD who presides over the des-
 “ tiny of all, he must be inimical to the felicity of
 “ the Human Race. What is it to me that the
 “ Earth is clothed with vegetables, if I have not the
 “ shade of a single tree at my disposal ? Of what
 “ importance are to me the laws of harmony and
 “ of love, which govern Nature, if I behold
 “ around me only objects faithless and deceiving ;

“or if my fortune, my condition, my religion,
 “impose celibacy upon me? The general felicity
 “diffused over the Earth, serves only as a bitter
 “aggravation of my particular wretchedness.
 “What interest is it possible for me to take in the
 “wisdom of an arrangement which renovates all
 “things, if, as a consequence of that very arrange-
 “ment, I feel myself sinking, and ready to be lost
 “for ever? One single wretch might arraign Pro-
 “vidence, and say with *Job*, the Arabian: *
 “*Wherefore is light given to him that is in misery;*
 “*and life unto the bitter in soul?* Alas! The ap-
 “pearances of happiness have been disclosed to
 “the view of Man, only to overwhelm him with
 “despair of ever attaining it. If a GOD, intelli-
 “gent and beneficent, governs Nature, diabolical
 “spirits direct and confound, at least the affairs
 “of the children of men.”

I shall, first, reply to the principal authorities,
 on which some of those objections are supported.
 They are extracted, in part, from a celebrated
 Poet, and a learned Philosopher, namely *Lucretius*,
 and from *Pliny*.

Lucretius has clothed the Philosophy of *Empe-
 docles* and *Epicurus* in very beautiful verses. His

* *Job*, chap. iii. ver. 20.

imagery is enchanting ; but that Philosophy of atoms, which adhere to each other by chance, is so completely absurd, that wherever it appears, the beauty of the poetry is impaired. For the truth of this, I confidently refer to the judgment of his partisans themselves. It speaks neither to the heart nor to the understanding. It offends equally in it's principles, and in the consequences deduced from them. To what, we may ask him, do those primary atoms, out of which you construct the elements of Nature, owe their existence ? Who communicated to them the first movement ? How is it possible they should have given to the aggregation of a great number of bodies, a spirit of life, a sensibility, and a will, which they themselves possessed not ?

If you believe, with *Leibnitz*, that those *monads*, or unities, have, in truth, perceptions peculiar to themselves, you give up the laws of chance, and are reduced to the necessity of allowing to the elements of nature, the intelligence which you refuse to it's AUTHOR. *Descartes* has, in truth, subjected those impalpable principles, and, if I may be allowed the expression, that metaphysical dust, to the laws of an ingenious Geometry ; and after him, the herd of Philosophers, seduced by the facility of erecting all sorts of systems with the same materials, have applied to them, by turns, the laws of attraction ;

attraction, of fermentation, of crystallization; in a word, all the operations of Chemistry, and all the subtilities of dialectics: but all, with equal success, that is, with none whatever. We shall demonstrate, in the article which follows this, when we come to speak of the weakness of Human Reason, that the method adopted in our Schools, of rising up to first causes, is the perpetual source of the errors of our Philosophy, in physics as well as in morals. Fundamental truths resemble the stars, and our reason is like the graphometer. If this instrument, constructed for the purpose of observing the heavenly bodies, has been deranged however slightly; if from the point of departure, we commit a mistake of the minutest angle imaginable, the error, at the extremity of the visual rays, becomes absolutely incommensurable.

There is something still more strange, in the method which *Lucretius* has thought proper to pursue: namely that, in a Work, the professed object of which is to materialize the Deity, he sets out with deifying matter. In this he has himself given way to an universal principle, which we shall endeavour to unfold, when we come to adduce the proofs of the Divinity from feeling; it is this, that we find it impossible powerfully to interest mankind, whatever be the object, without presenting to the Mind, some of the attributes of Deity.

Before

Before he attempts, therefore, to dazzle the understanding, as a Philosopher, he begins with setting the heart on fire, as a Poet. Here is a part of his exordium.

.....Hominum divâque voluptas,
Alma *Venus*, cœli subter labentia signa
Quæ mare navigerum, quæ terras frugiferentes
Concelebras, per te quoniam genus omne animantùm
Concipitur, visitque exortum lumina solis,
Te dea, te fugiunt venti, te nubila cœli,
Adventuque tuo, tibi suaves dædala tellus
Submittit flores, tibi rident æquora ponti,
Placatumque nitet diffuso lumine cælum.

.
Quæ quoniam rerum naturam sola gubernas,
Nec, sine te, quidquam dias in luminis oras
Exoritur, neque sit lætum, neque amabile quidquam,
Te fociam studeo scribendis versibus esse,
Quos ego de rerum naturâ pangere conor.

.
Quo magis æternum, da dictis, diva, leporem.

Effice ut in terrâ fera munera militiâ
Per maria ac terras omnes sopita quiescant ;
Nam tu sola potes tranquillâ pace juvare
Mortales, quoniam belli fera munera Mavors.
Armipotens regit, in gremium qui sæpe tuum se
Rejicit, æterno devictus vulnere amoris.

.
Hunc, tu diva, tuo recubantem corpore sancto
Circumfusa super, suaves ex ore loquelas
Funde, petens placidam Romanis, inclyta pacem :
Nam neque nos agere, hoc patriâ tempore iniquo,
Possumus æquo animo.

De Rerum Naturâ, lib. 1.

I shall

I shall endeavour, as well as I can, to give a plain prose translation of those beautiful verses.

“ ——— Delight of men and gods, gracious
“ *Venus!* who presideest over the sail-bearing
“ Ocean, and the fertile Earth, while the hosts
“ of Heaven glide majestically silent around;
“ since by thy prolific virtue, the whole animal
“ creation teems with life, and turns the opening
“ eye-ball to the light of the Sun; at thy ap-
“ proach, O Goddess, the winds are hushed, the
“ vapours that obscure the face of the sky dis-
“ perse, the variegated ground spreads a carpet
“ of enamelled flowers underneath thy feet; the
“ waters of the deep smile with joy, and the placid
“ sky is overspread with a milder light.....Seeing,
“ then, that thou reignest, sole Empress of Na-
“ ture; since without thee no living creature
“ arises into day, or possesses the capacity of re-
“ ceiving or communicating delight, how gladly
“ would I assume thee as my associate in the ar-
“ duous undertaking on which I now enter—an
“ enquiry into the nature of things.....Give, then,
“ O Goddess, somewhat of thy unfading grace to
“ my strains. And grant, meanwhile, that the
“ din of battle may cease over every land, over
“ every sea: for with thee it rests to reduce the
“ troubled world to peace; since *Mars*, all-power-
“ ful in arms, directs the thunder of war; who
“ frequently

“ frequently retires well-pleased from the en-
 “ guined plain, to folace himself in the soft dalli-
 “ ance of thy uncloying love....In those fond mo-
 “ ments, when affection can deny nothing, intreat
 “ him to have compassion on his own Rome and
 “ thine, and bestow on it lasting tranquillity ; for
 “ how can the voice of the philosophic Muse be
 “ heard amidst the confused noise of civil dis-
 “ cord ?”*

Lucretius

* Mr. Creech and Mr. Dryden have both translated this passage of *Lucretius*. It would have saved me a little labour, had I dared to transcribe from either of their poetical versions. But, every thing considered, I have ventured rather to hazard one of my own. If it shall be deemed deficient in poetical merit, two qualities, at least, it possesses ; it conveys enough of the sense of the Original, to answer the purpose of it's being quoted in this Work, and it cannot possibly give offence to any modest ear.

VENUS, all hail ! of Gods and men the pride ;
 Mov'd by whose pow'r, the heav'nly bodies glide,
 In mystic round ; thine is the teeming Earth,
 To thee the swelling Ocean owes his birth :
 Source of all life ! thou breath'st the living soul,
 And kindest joy “ from Indus to the Pole.”
 At thy approach the noisy tempests cease,
 The air grows pure, and all the World is peace ;
 For thee the SPRING her flow'ry mantle weaves,
 For thee AUTUMNUS piles his golden sheaves :

The

Lucretius is, in truth, constrained to admit, in the sequel of his Poem, that this goddess, so wonderfully beneficent, is directly chargeable with the ruin of health, of fortune, of parts, and, sooner or later, with the loss of reputation : that, from the very lap of the pleasures which she bestows, there issues a something which embitters enjoyment, which torments a man, and renders him mi-

The placid Deep reflects a clearer ray,
And SOL emits through Heaven a brighter day.

.

Since, Goddess, thus all own thy sov'reign pow'r ;
Since, without thee, none sees the natal hour ;
Without thee nought of fair, of sweet, is seen,
Delight of Nature ! Universal Queen !
Visit thy bard with some celestial dream ;
Be thou, my Muse, for Nature is my theme.

. :

Around my lays thy winning graces shed,
So shall immortal honours crown my head.

Meanwhile, command a troubled world to rest.

Bid the fierce foldier calm his angry breast.

Let Sea and Land thy genial influence feel ;

Let placid Nations at thine altar kneel.

Besmeared with blood, and sick of war's alarms,

Soothe back fierce MARS to thy all-conq'ring arms ;

Tell him how Rome now bleeds at every vein ;

Let thy sweet voice restore the gentle reign,

Of golden SATURN. Bid the trumpet cease,

Let all in ROME ; and all the WORLD be peace.

H. H.

ferable.

ferable. The unfortunate Bard himself fell a victim to this, for he died in the very prime of life, either from excessive indulgence, according to some, or poisoned, according to others, by an amorous potion administered by the hand of a woman.

In the passage above quoted, he ascribes to *Venus* the creation of the world; he addresses prayers to her; he bestows on her person the epithet of sacred; he invests her with a character of goodness, of justice, of intelligence, and of power, which belongs to GOD only; in a word, the attributes are so exactly the same, that, suppressing only the word *Venus*, in the invocation of his Poem, you may apply it almost entirely to the Divine Wisdom. There are even points of resemblance, so striking, to the representation given of it in the Book of Ecclesiasticus, that I cannot refrain from exhibiting the counterpart, that the Reader may have it in his power to make the comparison.

Ecclesiast chap. xxiv.

Vulgate Latin Version.

Common English Version.

3, 4, 5. Ego ex ore Altissimi
prodivi, primogenita ante om-
nem creaturam; ego feci in
cœlis ut oriretur lumen indefi-
cens,

3 I came out of the mouth
of the Most High, and covered
the earth as a cloud.

4. I dwelt in high places,
and

ciens, & sicut nebula texi omnem terram. Ego in altissimis habitavi, & thronus meus in columnâ nubis.

6, 7, 8, 9. Gyrum cœli circuii sola, & profundum abyssi penetraui; in fluctibus ambulavi, & in omni terrâ steti & in omni populo; & in omni populo primatum habui. Et omnium excellentium & humilium corda virtute calcavi, & in his omnibus requiem quasivi, & in hereditate domini morabor.

13. Quasi cedrus exaltatus sum in Libano, & quasi cypressus in Monte Sion.

14. Quasi palma exaltatus sum in Cades, & quasi plantatio rosæ in Jericho. Quasi oliva speciosa in campis, & quasi platanus exaltatus sum juxta aquam in plateis.

16. Ego quasi terebinthus extendi ramos meos, & rami mei honoris & gratiæ.

17. Ego quasi vitis fructificavi suauitatem odoris, et flores mei fructus honoris & honestatis.

and my throne is in a cloudy pillar.

5. I alone compassed the circuit of Heaven; and walked in the bottom of the Deep.

6. In the waves of the sea, and in all the earth, and in every people and nation, I got a possession.

7. With all these I fought rest: and in whose inheritance shall I abide?

13. I was exalted like a cedar in Libanus, and as a cypress-tree upon the mountains of Hermon.

14. I was exalted like a palm-tree in Engaddi, and as a rose-plant in Jericho, as a fair olive-tree in a pleasant field, and grew up as a plane-tree by the water.

16. As the turpentine tree; I stretched out my branches, and my branches are the branches of honour and grace,

17. As the vine brought I forth pleasant savour, and my flowers are the fruit of honour and riches.

18. Ego mater pulchræ dilectionis, & timoris, & agnitionis, & sanctæ spei. In me gratia omnis viæ & veritatis, in me omnis spes vitæ & virtutis.

19. Tranſite ad me, omnes qui concupiſcitis me, & generationibus meis implemini.

20. Spiritus enim meus ſuper mel dulce, & hæreditas mea ſuper mel & favum.

18. I am the mother of fair love, and fear, and knowledge, and holy hope : I therefore being eternal, am given to all my children which are named of him.

19. Come unto me, all ye that be deſirous of me, and fill yourſelves with my fruits.

20. For my memorial is ſweeter than honey, and mine inheritance than the honeycomb.

“ Out of the mouth of the ALMIGHTY proceeded I. Before any created being knew that
 “ it exiſted, I was. If there be in Heaven a light
 “ never to be extinguished, I commanded it to
 “ ariſe. If the Earth is involved in clouds, I
 “ commanded the vapour to aſcend. The lofty
 “ places of the Earth are my habitation; and my
 “ throne is in the cloudy pillar. In ſolitude I
 “ make the round of the ſtarry Heavens; I plunge
 “ to the bottom of the vaſt abyſs, and walk majeſtic
 “ under the waves of the Sea. On every
 “ land the ſole of my foot alights, and I travel
 “ from ſhore to ſhore. Wherever I appear, my
 “ ſovereignty is acknowledged. In the greatneſs
 “ of my might, I have ſubdued the heart of the
 “ humble and of the proud. I have ſought for a
 “ place of habitation in the miſt of them; but

“ I will fix mine abode only in the heritage of JE-
“ HOVAH....I have lifted up myself as a cedar upon
“ Mount Lebanon, and as the cypress-tree on the
“ hills of Zion, My branches have been exalted
“ to the Heavens, like the palm-trees of Kadesb,
“ and as the blossoms of the rose which surround
“ Jericho. I am beautiful as the olive on the
“ brow of the hill, and majestic as the plane-tree,
“ in an open place, by the fountains of water....
“ I have extended my boughs as the terebinthus ;
“ my branches are branches of honour and grace.
“ I have put forth, as the vine, blossoms of the
“ sweetest perfume, and my buds have produced
“ the fruits of glory and abundance. I am the
“ parent of holy love, of fear, of knowledge, and
“ of sacred hope ; I alone point out the road that
“ is safe and easy ; and unfold truths that give de-
“ light ; in me reposes all the expectation of life
“ and virtue. Come to me, all ye who love me ;
“ and my never-ceasing productions shall fill you
“ with rapture ; for my spirit is sweeter than ho-
“ ney, and my distribution of it far superior to the
“ cells of the honeycomb.”

This feeble translation is after the Latin prose version, itself a translation from the Greek, and it again from the Hebrew. It is not to be doubted, therefore, that in passing through so many strainers, much of the grace of the original must have evaporated.

evaporated. But even as it is, it possesses a decided superiority, in respect of pleasantness and sublimity of imagery, over the verses of *Lucretius*, who appears to have borrowed his principal beauties from this passage. And here I dismiss that Poet: the exordium of his performance is a complete refutation of it.

Pliny takes the directly opposite course. In the very threshold of his Natural History, he affirms that there is no God, and the whole of that Work is an elaborate demonstration of the being of GOD. His authority must necessarily be of considerable weight, as it is not that of a Poet, to whom opinions are a matter of indifference, provided he can produce a striking picture; nor that of a sectary, obstinately determined to support a party, whatever violence may be done to conscience; nor, finally, that of a flatterer, making his court to vicious Princes. *Pliny* wrote under the virtuous *Titus*, and has dedicated his Book to him. He carries to such a height, the love of truth, and contempt of the glory of the age in which he lived, as to condemn the victories of *Cesar*, in Rome itself, and when addressing a Roman Emperor. He is replete with humanity and virtue. He frequently exposes to censure the cruelty of masters to their slaves, the luxury of the great, nay, the dissolute conduct of several Em-

presses. He sometimes pronounces the panegyric of good men ; and exalts even above the inventors of arts, persons who have rendered themselves illustrious by their continency, their modesty, and their piety.

His Work, in other respects, is a combination of brilliancies. It is a real Encyclopedia, which contains, as it ought, the history of the knowledge, and of the errors of his time. These last are sometimes imputed to him very unjustly, for he frequently brings them forward, merely in the view of refuting them. But he has been abused by the Physicians, and the [Apothecaries, who have extracted the greatest part of their prescriptions from him, because he finds fault with their conjectural art, and with their systematic spirit. He abounds, besides, in curious information, in profound views, and interesting traditions ; and, what renders his performance invaluable, he uniformly expresses himself in a picturesque manner. With all this taste, judgment, and knowledge, *Pliny* is an atheist. Nature, from whose capacious stores, he has derived such various intelligence, may address him in the words of *Cesar* to *Brutus* : *What, you too, my son !*

Pliny I love, and I esteem : and if I may be permitted to say, in his justification, what I think of
his

his immortal Work, I believe it to be falsified in the passage where he is made to reason as an atheist. All his commentators agree in thinking, that no one Author has suffered more from the unfaithfulness of transcribers, than he has done; and this to such a degree, that copies of his Natural History exist, in which there are whole chapters entirely different. Consult, among others, what *Mathiola* says on the subject, in his commentaries on *Dioscorides*. I shall here take occasion to observe, that the Writings of the Ancients, on their way to us, have passed through more than one unfaithful language, and what is much worse, through more than one suspicious hand. They have met with the fate of their monuments, among which their temples have been most of all degraded. Their books have, in like manner, been mutilated chiefly in those passages which are favourable to religion, or the reverse. An instance of this we have, in the transcription of *Cicero's* Treatise on the Nature of the Gods, in which the objections against Providence are omitted.

Montagne upbraids the first Christians with having suppressed, on account of four or five articles which contradicted their creed, a part of the Works of *Cornelius Tacitus*, "though," says he, "the Emperor *Tacitus*, his relation, had, by ex-

“ prefs edicts, furnished all the libraries in the
“ World with them *.”

In our own days, do we not fee how every party exerts itfelf to run down the reputation, and the opinions of the party which oppofes it? Mankind is, in the hands of religion and philofophy, like the old man in the fable, between two dames of different ages. They had both a mind to trim his locks, each in her own way. The younger picked carefully out all the white hairs, which fhe could not bear; the old one, for an oppofite reafon, as carefully removed the black: the confequence was, his head was fpeedily reduced to complete baldnefs.

It is impoffible to adduce a more fatisfactory demonftration of this ancient infidelity of the two parties, than an interpolation to be found in the Writings of *Flavius Jofephus*, who was contemporary with *Pliny*. He is made to fay, in fo many words, that the Meffiah was juft born; and he continues his narration, without referring, fo much as once, to this wonderful event, to the end of a voluminous hiftory. How can it be believed that *Jofephus*, who frequently indulges himfelf in

* Effays, book ii. chap. xix.

a tedious

a tedious detail of minute circumstances, relating to events of little importance, should not have reverted a thousand and a thousand times, to a birth so deeply interesting to his Nation, considering that it's very destiny was involved in that event, and that even the destruction of Jerusalem was only one of the consequences of the death of JESUS CHRIST? He, on the contrary, perverts the meaning of the prophecies which announce Him, applying them to *Vespasian* and to *Titus*; for he, as well as the other Jews, expected a Messiah triumphant. Besides, had *Josephus* believed in CHRIST, would he not have embraced his Religion?

For a similar reason, is it credible that *Pliny* should commence his Natural History with denying the existence of GOD, and afterwards fill every page of it, with expatiating on the wisdom, the goodness, the providence, the majesty of Nature; on the presages and pre-monitions, sent expressly from the Gods; and even on the miracles divinely operated through the medium of dreams?

Certain savage tribes have likewise been adduced as affording examples of atheism, and every sequestered corner of the Globe has been for this purpose explored. But obscure remote tribes were no more intended to serve as an example to

the human race, than certain mean and obscure families, among ourselves, could be proposed as proper models to the Nation ; especially when the professed object is to support, by authority, an opinion which is necessarily subversive of all society. Besides, such assertions are absolutely false. I have read the history of the voyages from which they are extracted. The travellers acknowledge, that they had but a transient view of those people, and that they were totally unacquainted with their languages. They took it for granted, that there could be no religion among them, because they saw no temples ; as if any other temple were necessary to a belief in GOD than the temple of Nature ! These same travellers likewise contradict themselves ; for they relate, that those Nations, whom they elsewhere represent as destitute of all religion, make obeisance to the Moon, at the change, and when full, by prostrating themselves to the Earth, or by lifting up their hands to Heaven : that they pay respect to the memory of their fore-fathers, and place viands on their tombs. The immortality of the soul, admitted in whatever manner you will, necessarily supposes the existence of GOD.

But if the first of all truths stood in need of testimony from men, we could collect that of the whole Human Race, from geniuses the most exalted,

alted, down to the lowest state of ignorance. This unanimity of testimony is of irresistible weight ; for it is impossible that such a thing should exist on the Earth as universal error.

Hear what the sage *Socrates* said to *Euthydemus*, who expressed a wish to have a complete assurance that the Gods existed :

“ Know, assuredly, that I told you the truth *,
 “ when I declared the existence of the Gods, and
 “ asserted, that Man is their peculiar care : but
 “ expect not that they should assume a sensible
 “ appearance, and present themselves before you ;
 “ satisfy yourself with the contemplation of their
 “ works, and with paying them adoration ; re-
 “ member that this is the way in which they make
 “ themselves known unto men : for of all the hea-
 “ venly powers whose liberality towards us is so
 “ great, no one ever becomes the visible dispenser
 “ of his own bounty ; and the great GOD him-
 “ self, who created the Universe, and who sus-
 “ tains that vast fabric, all the parts of which are
 “ adjusted in perfect beauty and goodness ; He
 “ who constantly watches over it, and takes care
 “ that it shall not wax old, and fall into decay
 “ through length of duration, but always subsist

* *Xenophon's Memorable Things of Socrates*, book iv.

“ in immortal vigor * ; He who also, with power
 “ uncontrolable, constrains the whole to obey his
 “ will; and that with a promptitude which far
 “ surpasses

* *Socrates* had made a particular study of Nature ; and although his judgment, respecting the duration and preservation of her works, may be contrary to that of our philosophy, which considers the Globe of the Earth, especially, as in a progressive state of ruin, it is in perfect harmony with that of the Holy Scriptures, which give us positive assurances that GOD upholds it, and with our own experience on the subject, as I have already shewn. We have little reason to undervalue the physical knowledge of the Ancients, except in so far as it was reduced to system. We ought to recollect that they had made most of the discoveries which the Moderns boast as all their own. The Tuscan Philosophers understood the art of conjuring down the thunder. Good King *Numa* made experiments on this subject. *Tullus Hostilius* took a fancy to imitate, but fell a victim to his attempt, from want of understanding how to conduct the experiments in a proper manner. (Consult *Plutarch*.) *Philolaüs*, the Pythagorean, advanced long before *Copernicus*, that the Sun was the centre of the World ; and before *Christopher Columbus*, that our Earth consisted of two Continents, that on which we are placed, and the one opposite to it. Several Philosophers of Antiquity maintained, that comets were stars which pursued a regular course. *Pliny* himself says, that they all move in a northerly direction, which is generally true. It is not yet, however, two hundred years, since comets were believed, in Europe, to be vapors which caught fire in the intermediate regions of the air. The general belief, about that period, likewise, was, that the Sea furnished a supply of water to the fountains and rivers, by a process of filtration through the pores of the Earth, though it is said in a hundred passages of Scripture, that

“surpasses our imagination: He, I say, is abundantly visible in all those wonders of which He is the AUTHOR. But let our eyes attempt to penetrate to his throne, and to contemplate all these mighty operations in their source, here He must be ever invisible.

“Observe, for a moment, that the Sun, who seems designedly exposed to the view of the whole Creation, permits no one, however, steadily to behold him: the man who dares to make the rash attempt, is instantly punished with blindness. Nay, more, every instrument employed by the Gods is invisible. The thunder is darted from on high; it dashes in pieces

that by the rains their sources are kept flowing. Of this we now have the most complete conviction, by accurate observations on the evaporations of the Ocean. The monuments which the Ancients have transmitted to us in Architecture, Sculpture, Poetry, Tragedy, History, will ever serve as models to us. We are indebted to them besides for the invention of almost all the other Arts; and it is presumable that these Arts had the same superiority over ours, which their liberal Arts have. As to the natural Sciences, they have not left us any object of comparison; besides, the Priests, who were chiefly employed in the cultivation of them, carefully concealed their knowledge from the People. There is little room to doubt, that they possessed, on this subject, an illumination far transcending ours. Consult what the judicious Sir *William Temple* has said of the magic of the ancient Egyptians.

“every

“ every thing it meets : but no one can see it fall,
 “ can see it strike, can see it return. The winds
 “ are invisible, though we see well the ravages
 “ which they every day commit, and feel their in-
 “ fluence the moment that they begin to blow. If
 “ there be any thing in Man that partakes of the
 “ divine Nature, it is his soul. There can be no
 “ doubt that this is his directing, governing prin-
 “ ciple, nevertheless, it is impossible to see it. From
 “ all this be instructed not to despise things invi-
 “ sible: be instructed to acknowledge their powers
 “ in their effects, and to honour the DEITY.”

Newton, who pursued his researches into the
 Laws of Nature so profoundly, never pronounced
 the name of GOD, without moving his hat, and
 otherwise expressing the most devout respect.
 He took pleasure in recalling this sublime idea,
 even in his moments of conviviality, and con-
 sidered it as the natural bond of union among all
 Nations. *Corneille le Bruyn*, the Dutch Painter,
 relates, that happening to dine one day at his
 table, in company with several other foreigners,
Newton, when the desert was served up, proposed
 a health to the Men of every Country who believe
 in GOD. This was drinking the health of the
 Human Race. Is it possible to conceive, that so
 many Nations, of languages and manners so very
 different, and, in many cases, of an intelligence so
 contracted,

contracted, should believe in GOD, if that belief were the result of some tradition, or of a profound metaphysical disquisition? It arises from the spectacle of Nature simply. A poor Arabian of the Desert, ignorant as most of the Arabians are, was one day asked, How he came to be assured that there was a God? "In the same way," replied he, "that I am able to tell, by the print impressed on the sand, whether it was a man or a beast which passed that way *."

It is impossible for Man, as has been said, to imagine any form, or to produce a single idea of which the model is not in Nature. He expands his reason only on the reasons which Nature has supplied. GOD must, therefore, necessarily exist, were it but for this, that Man has an idea of Him. But if we attentively consider, that every thing, necessary to Man, exists in a most wonderful adaptation to his necessities, for the strongest of all reasons, GOD likewise must exist, He who is the universal adaptation of all the societies of the Human Race.

But I should wish to know, In what way, the persons who doubt of his existence, on a review of the Works of Nature, would desire to be as-

* Travels through Arabia, by Monf. d'Arvieux.

fured of it? Do they wish that he should appear under a human form, and assume the figure of an old man, as he is painted in our churches? They would say, This is a man. Were He to invest himself with some unknown and celestial form, could we in a human body support the sight? The complete and unveiled display of even a single one of his works on the Earth, would be sufficient to confound our feeble organs. For example, if the Earth wheels around it's axis, as is supposed, there is not a human being in existence, who, from a fixed point in the Heavens, could view the rapidity of it's motion without horror; for he would behold rivers, oceans, kingdoms whirling about under his feet, with a velocity almost thrice as great as that of a cannon-ball. But even the swiftness of this diurnal rotation is a mere nothing: for the rapidity with which the Globe describes it's annual circle, and hurls us round the Sun, is seventy-five times greater than that of a bullet shot from the cannon. Were it but possible for the eye to view through the skin, the mechanism of our own body, the sight would overwhelm us. Durst we make a single movement, if we saw our blood circulating, the nerves pulling, the lungs blowing, the humors filtrating, and all the incomprehensible assemblage of fibres, tubes, pumps, currents, pivots, which sustain an existence, at once so frail and so presumptuous?

Would

Would we wish, on the contrary, that GOD should manifest himself in a manner more adapted to his own nature, by the direct and immediate communication of his intelligence, to the exclusion of every intervenient mean?

Archimedes, who had a mind capable of such intense application, as not to be disturbed from his train of thought, by the sack of Syracuse, in which he lost his life, went almost distracted, from the simple perception of a geometrical truth, of which he suddenly caught a glimpse. He was pondering, while in the bath, the means of discovering the quantity of alloy which a rascally goldsmith had mixed in *Hiero's* golden crown; and having found it, from the analogy of the different weight of his own body, when in the water, and out of it, he sprung from the bath, naked as he was, and ran like a madman through the streets of Syracuse, calling out, *I have found it ! I have found it !*

When some striking truth, or some affecting sentiment, happens to lay hold of the audience at a theatre, you see some melted into tears, others almost choked with an oppressed respiration, others quite in a transport, clapping their hands, and stamping with their feet; the females in the boxes actually fainting away. Were these violent agitations of spirit to go on progressively but for a few
minutes

minutes only, the persons subject to them might lose their reason, perhaps their life. What would be the case, then, if the Source of all truth, and of all feeling, were to communicate himself to us in a mortal body? GOD has placed us at a suitable distance from his infinite Majesty; near enough to have a perception of it, but not so near as to be annihilated by it. He veils his intelligence from us under the forms of matter; and He restores our confidence respecting the movements of the material world by the sentiment of his intelligence. If at any time He is pleased to communicate himself in a more intimate manner, it is not through the channel of haughty Science, but through that of our virtue. He discloses himself to the simple, and hides his face from the proud.

“But,” it is asked, “What made GOD? “Why should there be a God?” Am I to call in question his existence, because I am incapable of comprehending his origin? This style of reasoning would enable us to conclude, that man does not exist: for, Who made men? Why should there be men? Why am I in the world in the eighteenth century? Why did I not arrive in some of the ages which went before? and, Wherefore should I not be here in those which are to come? The existence of GOD is at all times necessary, and that of Man is but contingent. Nay, this is not all; the existence

istence of Man is the only existence apparently superfluous in the order established upon the Earth. Many islands have been discovered without inhabitants, which presented abodes the most enchanting, from the disposition of the valleys, of the waters, of the woods, of the animals. Man alone deranges the plans of Nature : he diverts the current from the fountain ; he digs into the side of the hill ; he sets the forest on fire ; he massacres without mercy every thing that breathes ; every where he degrades the Earth, which could do very well without him.

The harmony of this Globe would be partially destroyed, perhaps entirely so, were but the smallest, and, seemingly, most insignificant, genus of plants to be suppressed ; for it's annihilation would leave a certain space of ground destitute of verdure, and thereby rob of it's nourishment the species of insect which there found the support of life. The destruction of the insect, again, would involve that of the species of bird, which in these alone finds the food proper for their young ; and so on to infinity. The total ruin of the vegetable and animal kingdoms might take it's rise from the failure of a single moss, as we may see that of an edifice commence in a small crevice. But if the Human Race existed not, it would be impossible to suppose that any thing had been deranged :

every brook, every plant, every animal, would always be in it's place. Indolent and haughty Philosopher, who presumest to demand of Nature, wherefore there should be a God, why demandest thou not rather wherefore there should be men ?

All his Works speak of their AUTHOR. The plain which gradually escapes from my eye, and the capacious vault of Heaven which encompasses me on every side, convey to me an idea of his immensity ; the fruits suspended on the bough within reach of my hand, announce his providential care ; the voice of the tempest proclaims his power ; the constant revolution of the seasons displays his wisdom ; the variety of provision which his bounty makes, in every climate, for the wants of every thing that lives, the stately port of the forests, the soft verdure of the meadow, the grouping of plants, the perfume and enamel of flowers, an infinite multitude of harmonies, known and unknown, are the magnificent languages which speak of HIM to all men, in a thousand and a thousand different dialects.

Nay, the very order of Nature is superfluous : GOD is the only Being whom disorder invokes, and whom human weakness announces. In order to attain the knowledge of his attributes, we need only to have a feeling of our own imperfections.

Oh !

Oh ! how sublime is that prayer *, how congenial to the heart of Man, and still in use among People whom we presume to call Savages ! “ O Eternal ! “ Have mercy upon me, because I am passing away : O Infinite ! because I am but a speck : “ O Most Mighty ! because I am weak : O Source “ of Life ! because I draw nigh to the grave : O “ Omniscient ! because I am in darkness : O All- “ bounteous ! because I am poor : O All-suffi- “ cient ! because I am nothing.”

Man has given nothing to himself : he has received all. And “ He who planted the ear, shall “ He not hear ? He who formed the eye, shall “ He not see ? He who teacheth Man knowledge, “ shall not He know ?” I should consider myself as offering an insult to the understanding of my Reader, and should derange the plan of my Work, were I to insist longer on the proofs of the exist-

* See *Flacourt's History of the Island of Madagascar*, chap. xliv. page 182. You will there find this prayer, embarrassed with many circumlocutions, but conveying the meaning which I have expressed. It is wonderfully strange that Negroes should have discovered all the attributes of Deity, in the imperfections of Man. It is with just reason that the Divine Wisdom has said of itself, that it rested on all Nations : *Et in omni terrâ steti, & in omni populo ; & in omni populo primatum habui*. In every land, among every people, I fixed my station ; and obtained the chief place amidst the Nations. ECCLES. chap. xxiv.

ence of GOD. It remains that I reply to the objections raised against his goodness.

It needs must be, we are told, that the God of Nature should differ from the God of Religion, for their Laws are contradictory. This is just the same thing with saying, that there is one God of metals, another God of plants, and another of animals, because all these beings are subjected to laws peculiar to themselves. Nay, in all the kingdoms of Nature, the *genera* and the *species* have other Laws besides, which are particular to them, and which, in many cases, are in opposition among themselves; but those different Laws constitute the happiness of each species in particular; and they concur, in one grand combination, in a most admirable manner, to promote the general felicity.

The Laws which govern Man are derived from the same plan of Wisdom which has constructed the Universe. Man is not a being of a nature perfectly simple. Virtue, which ought to be the great object of his pursuit on the Earth, is an effort which he makes over himself, for the good of Mankind, in the view of pleasing GOD only. It proposes to him, on the one hand, the Divine Wisdom as a model; and presents to him, on the other, the most secure and unerring path to his
own

own happiness. Study Nature, and you will perceive that nothing can be more adapted to the felicity of Man, and that Virtue carries her reward in her bosom, even in this world. A man's continency and temperance secure his health; contempt of riches and glory, his repose: and confidence in GOD, his fortitude. What can be more adapted to the condition of a creature exposed to so much misery, than modesty and humility. Whatever the revolutions of life may be, he has no farther fear of falling, when he has taken his seat on the lowest step.

Let us not complain that GOD has made an unfair distribution of his gifts, when we see the abundance and the state in which some bad men live. Whatever is on the Earth most useful, most beautiful, and the best, in every kind of thing, is within the reach of every man. Obscurity is much better than glory, and virtue than talents. The Sun, a little field, a wife and children, are sufficient to supply a constant succession of pleasures to him. Must he have luxuries too? A flower presents him colours more lovely than the pearl dragged from the abysses of the Ocean; and a burning coal on his hearth has a brighter lustre, and, beyond all dispute, is infinitely more useful, than the famous gem which glitters on the head of the Grand Mogul.

After all, What did GOD owe to every man ? Water from the fountain, a little fruit, wool to clothe him, as much land as he is able to cultivate with his own hands. So much for the wants of his body. As to those of the soul, it is sufficient for him to possess, in infancy, the love of his parents; in maturity, that of his wife; in old age, the gratitude of his children; at all seasons, the goodwill of his neighbours, the number of whom is restricted to four or five, according to the extent and form of his domain; so much knowledge of the Globe as he can acquire by rambling, half a day, so as to get home to his own bed at night, or, at most, to the extremity of his domestic horizon; such a sense of Providence as Nature bestows on all men, and which will spring up in his heart fully as well after he has made the circuit of his field, as after returning from a voyage round the World.

With corporeal enjoyments, and mental gratifications like these, he ought to be content; whatever he desires beyond these, is above his wants, and inconsistent with the distributions of Nature. It is impossible for him to acquire superfluity but by the sacrifice of some necessary; public consideration he must purchase at the price of domestic happiness; and a name in the world of Science, by renouncing his repose. Besides, those honours,
those

those attendants, those riches, that submission which men so eagerly hunt after, are desired unjustly. A man cannot obtain them but by plundering and enslaving his fellow-citizens. The acquisition of them exposes to incredible labour and anxiety, the possession is disturbed by incessant care, and privation tears the heart with regret. By pretended blessings such as these, health, reason, conscience, all is depraved and lost. They are as fatal to Empires as to families : it was neither by labour, nor indigence ; no, not even by wars, that the Roman Empire fell into ruin ; but by the accumulated pleasures, knowledge, and luxury of the whole Earth.

Virtuous persons, in truth, are sometimes destitute not only of the blessings of Society, but of those of Nature. To this I answer, that their calamities frequently are productive of unspeakable benefit to them. When persecuted by the world, they are frequently, they are usually, incited to engage in some illustrious career. Affliction is the path of great talents, or, at least, that of great virtues, which are infinitely preferable. “ It is not “ in your power,” said *Marcus Aurelius*, “ to be a “ Naturalist, a Poet, an Orator, a Mathematician ; “ but it is in your power to be a virtuous man, “ which is the best of all.”

I have remarked, besides, that no tyranny starts up, of whatever kind, respecting either facts or opinions, but a rival tyranny instantly starts up in opposition, which counterbalances it ; so that virtue finds a protection from the very efforts made by vice to oppress and crush it. The good man frequently suffers : it is admitted ; but if Providence were to interpose for his relief, as soon as he needed it, Providence would be at his disposal ; in other words, Man would have the direction of his MAKER. Besides, virtue, in this case, would merit no praise : but rarely does it happen that the virtuous man does not sooner or later behold the downfall of his tyrant. Or supposing, the worst that can happen, that he falls a victim to tyranny, the boundary of all his woes is death. GOD could owe Man nothing. He called him from non-existence into life ; in withdrawing life, He only resumes what He gave ; we have nothing whereof to complain.

An entire resignation to the will of GOD ought, in every situation, to soothe the soul to peace. But if the illusions of a vain world should chance to ruffle our spirit, let me suggest a consideration which may go far toward restoring our tranquillity. When any thing in the order of Nature bears hard upon us, and inspires mistrust of it's

AUTHOR,

AUTHOR, let us suppose an order of things contrary to that which galls us, and we shall find a multitude of consequences resulting from this hypothesis, which would involve much greater evils than those whereof we complain. We may employ the contrary method, when some imaginary plan of human perfection would attempt to seduce us. We have but to suppose it's existence, in order to see innumerable absurd consequences spring up out of it. This twofold method, employed frequently by *Socrates*, rendered him victorious over all the sophists of his time, and may still be successfully employed to confute those of the age in which we live. It is at once a rampart which defends our feeble reason, and a battery which levels with the dust all the delusion of human opinions. If you wish to justify the order of Nature, it is sufficient to deviate from it; and, in order to refute all human systems, nothing more is necessary than to admit them.

For example, complaints are made of death: but if men were not to die, what would become of their posterity? Long before now there would not have been room for them on the face of the Earth. Death, therefore, is a benefit. Men complain of the necessity of labouring: but unless they laboured, how could they pass their time? The reputedly happy of the age, those who have nothing to do,
are

are at a loss how to employ it. Labour, therefore, is a benefit. Men envy the beasts the instinct which guides them : but if, from their birth, they knew, like them, all that they ever are to know, what should they do in the World ? They would faunter through it without interest, and without curiosity. Ignorance, therefore, is a benefit.

The other ills of Nature are equally necessary. Pain of body, and vexation of spirit, which so frequently cross the path of life, are barriers erected by the hand of Nature, to prevent our deviating from her Laws. But for pain, bodies would be broken to pieces on the slightest shock : but for chagrin, so frequently the companion of our enjoyments, the mind would become the victim of every sickly appetite. Diseases are the efforts of temperament to purge off some noxious humour. Nature employs disease not to destroy the body, but to preserve it. In every case, it is the consequence of some violation of her Laws, physical or moral. The remedy is frequently obtained by leaving her to act in her own way. The regimen of aliments restores our health of body, and that of men, tranquillity of mind. Whatever may be the opinions which disturb our repose in society, they almost always vanish into air in solitude. Sleep itself simply dispels our chagrin more gently, and more infallibly, than a book of morals.

If

If our distresses are immovable, and such as break our rest, they may be mitigated by having recourse to GOD. Here is the central point toward which all the paths of human life converge. Prosperity, at all seasons, invites us to his presence, but adversity leaves us no choice. It is the means which GOD employs to force us to take refuge in Himself alone. But for this voice, which addresses itself to every one of us, we should soon forget Him, especially in the tumult of great cities, where so many fleeting interests clash with those which are eternal, and where so many second causes swallow up all attention to the FIRST.

As to the evils of Society, they are no part of the plan of Nature ; but those very evils demonstrate the existence of another order of things : for is it natural to imagine, that the BEING good and just, who has disposed every thing on the Earth to promote the happiness of Man, will permit him to be deprived of it, without punishing the wretch who dared to counteract his gracious designs ? Will He do nothing in behalf of the virtuous, but unfortunate, man, whose constant study was to please Him, when He has loaded with blessings so many miscreants who abuse them ? After having displayed a bounty which has met with no return, will He fail in executing necessary justice ?

But

“ But,” we are told, “ every thing dies with us. Here we ought to believe our own experience ; we were nothing before our birth, and “ we shall be nothing after death.” I adopt the analogy ; but if I take my point of comparison from the moment when I was nothing, and when I came into existence, What becomes of this argument ? Is not one positive proof better than all the negative proofs in the world ? You conclude from an unknown past to an unknown future, to perpetuate the nothingness of Man ; and I, for my part, deduce my consequence from the present, which I know, to the future, which I do not know, as an assurance of this future existence. I proceed on the presumption of a goodness and a justice to come, from the instances of goodness and justice which I actually see diffused over the Universe.

Besides, if we have, in our present state, the desire and the pre-sentiment only of a life to come ; and if no one ever returned thence to give us information concerning it, the reason is, a proof more sensible would be inconsistent with the nature of our present life on the Earth. Evidence on this point must involve the same inconveniences with that of the existence of GOD. Were we assured by some sensible demonstration, that a world to come was prepared for us, I have the fullest

fullest conviction that all the pursuits of this world would from that instant be abandoned. This perspective of a divine felicity, here below, would throw us into a lethargic rapture.

I recollect that on my return to France, in a vessel which had been on a voyage to India, as soon as the sailors had perfectly distinguished the land of their native country, they became, in a great measure, incapable of attending to the business of the ship. Some looked at it wistfully, without the power of minding any other object; others dressed themselves in their best clothes, as if they had been going that moment to disembark; some talked to themselves, and others wept. As we approached, the disorder of their minds increased. As they had been absent several years, there was no end to their admiration of the verdure of the hills, of the foliage of the trees, and even of the rocks which skirted the shore, covered over with sea-weeds and mosses; as if all these objects had been perfectly new to them. The church spires of the villages where they were born, which they distinguished at a distance up the country, and which they named one after another, filled them with transports of delight. But when the vessel entered the port, and when they saw on the quays, their friends, their fathers, their mothers, their wives, and their children, stretching out their arms

to

to them with tears of joy, and calling them by their names, it was no longer possible to retain a single man on board; they all sprung ashore, and it became necessary, according to the custom of the port, to employ another set of mariners to bring the vessel to her moorings.

What, then, would be the case, were we indulged with a sensible discovery of that Heavenly Country, inhabited by those who are most dear to us, and who alone are most worthy of our sublime affections? All the laborious and vain solitudes of a present life would come to an end. The passage from the one world to the other being in every man's power, the gulf would be quickly shot: but Nature has involved it in obscurity, and has planted doubt and apprehension to guard the passage.

It would appear, we are told by some, that the idea of the immortality of the soul, could arise only from the speculations of men of genius, who, considering the combination of this Universe, and the connection which present scenes have with those which preceded them, must have thence concluded, that they had a necessary connection with futurity; or else, that this idea of immortality was introduced by Legislators, in a state of polished society, as furnishing a distant hope, tending to console

console Mankind under the pressure of their political injustice. But, if this were the case, how could it have found its way into the deserts, and entered the head of a Negro, of a Caraïb, of a Patagonian, of a Tartar? How could it have been diffused, at once, over the islands of the South-Seas, and over Lapland; over the voluptuous regions of Asia, and the rude Climates of North-America; among the inhabitants of Paris, and those of the new Hebrides? How is it possible that so many Nations, separated by vast Oceans, so different in manners and in language, should have unanimously adopted one opinion; Nations which frequently affect, from national animosity, a deviation from the most trivial customs of their neighbours?

All believe in the immortality of the soul. Whence could they have derived a belief so flatly contradicted by their daily experience? They every day see their friends die; but the day never comes when any one re-appears. In vain do they carry victuals to their tombs; in vain do they suspend, with tears, on the boughs of the adjoining trees, the objects which in life were most dear to them; neither these testimonies of an inconsolable friendship, nor the vows of conjugal affection challenged by their drooping mates, nor the lamentations of their dear children, poured out over
the

earth which covers their remains, can bring them back from the land of shadows. What do they expect for themselves, from a life to come, who express all this unavailing regret over the ashes of their departed favourites? There is no prospect so inimical to the interests of most men; for some, having lived a life of fraud, or of violence, have reason to apprehend a state of punishment; others, having been oppressed in this world, might justly fear, that the life to come was to be regulated conformably to the same destiny which presided over that which they are going to leave.

Shall we be told, It is pride which cherishes this fond opinion in their breasts? What, is it pride that induces a wretched Negro, in the West-Indies, to hang himself, in the hope of returning to his own country, where a second state of slavery awaits him? Other Nations, such as the islanders of Taïti, restrict the hope of this immortality, to a renovation of precisely the same life which they are going to leave. Ah! the passions present to Man far different plans of felicity; and the miseries of his existence, and the illumination of his reason, would long ago have destroyed the life that is, had not the hope of a life to come been, in the human breast, the result of a supernatural feeling.

But

But wherefore is man the only one of all animals subjected to other evils than those of Nature? Wherefore should he have been abandoned to himself, disposed as he is to go astray? He is, therefore, the victim of some malignant Being.

It is the province of Religion to take us up where Philosophy leaves us. The nature of the ills which we endure, unfolds their origin. If man renders himself unhappy, it is because he would, himself, be the arbiter of his own felicity. Man is a god in exile. The reign of *Saturn*, the Golden Age, *Pandora's* box, from which issued every evil, and at the bottom of which hope alone remained ; a thousand similar allegories, diffused over all Nations, attest the felicity, and the fall, of a first Man.

But there is no need to have recourse to foreign testimonies. We carry the most unquestionable evidence in ourselves. The beauties of Nature bear witness to the existence of GOD, and the miseries of Man confirm the truths of Religion. There exists not a single animal but what is lodged, clothed, fed, by the hand of Nature, without care, and almost without labour. Man alone, from his birth upward, is overwhelmed with calamity. First, he is born naked; and possessed of so little instinct, that if the mother who bare

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him, were not to rear him for several years, he would perish of hunger, of heat, or of cold. He knows nothing but from the experience of his parents. They are under the necessity of finding him a place where to lodge, of weaving garments for him, of providing his food for eight or ten years. Whatever encomiums may have been passed on certain countries for their fertility, and the mildness of their climate, I know of no one in which subsistence of the simplest kind does not cost Man both solicitude and labour. In India, he must have a roof over his head to shelter him from the heat, from the rains, and from the insects. There, too, he must cultivate rice, weed it, thresh it, shell it, dress it. The banana, the most useful of all the vegetables of those countries, stands in need of being watered, and of being hedged round, to secure it from the attacks of the wild beasts by night. Magazines must likewise be provided, for the preservation of provisions during those seasons when the Earth produces nothing. When Man has thus collected around him every thing necessary to a quiet and comfortable life, ambition, jealousy, avarice, gluttony, incontinency, or languor, take possession of his heart. He perishes almost always the victim of his own passions. Undoubtedly, to have sunk thus below the level of the beasts, Man must have aspired at an equality with the DEITY.

Wretched

Wretched mortals! Seek your happiness in virtue, and you will have no ground of complaint against Nature. Despise that useless knowledge, and those unreasonable prejudices, which have corrupted the Earth, and which every age subverts in its turn. Love those Laws which are eternal. Your destiny is not abandoned to chance, nor to mischievous demons. Recal those times, the recollection of which is still fresh among all Nations. The brute creation every where found the means of supporting life; Man alone had neither aliment, nor clothing, nor instinct.

Divine wisdom left Man to himself, in order to bring him back to GOD. She scattered her blessings over the whole Earth that, in order to gather them, he might explore every different region of it; that he might expand his reason by the inspection of her works, and that he might become enamoured of her from a sense of her benefits. She placed between herself and him, harmless pleasures, rapturous discoveries, pure delights, and endless hopes, in order to lead him to herself, step by step, through the path of knowledge and happiness. She fenced his way on both sides, by fear, by languor, by remorse, by pain, by all the ills of life, as boundaries destined to prevent him from wandering and losing himself. The mother, thus, scatters fruit along

the ground to induce her child to learn to walk ; she keeps at a little distance ; smiles to him, calls him, stretches out her arms towards him : but if he happens to fall, she flies to his assistance, she wipes away his tears, and comforts him.

Thus Providence interposes for the relief of Man, supplying his wants in a thousand extraordinary ways. What would have become of him in the earliest ages, had he been abandoned to his own reason, still unaided by experience ? Where found he corn, which at this day constitutes a principal part of the food of so many Nations, and which the Earth, while it spontaneously produces all sorts of plants, no where exhibits ? Who taught him agriculture, an art so simple, that the most stupid of Mankind is capable of learning it, and yet so sublime, that the most intelligent of animals never can pretend to practise it ? There is scarcely an animal but what supports it's life by vegetables, but what has daily experience of their re-production, and which does not employ, in quest of those that suit them, many more combinations than would have been necessary for re-sowing them.

But, on what did Man himself subsist, till an *Ifis* or a *Ceres* revealed to him this blessing of the skies ? Who shewed him, in the first ages of the World, the original fruits of the orchard, scattered
over

over the forests, and the alimentary roots concealed in the bosom of the Earth? Must he not, a thousand times, have died of hunger, before he had collected a sufficiency to support life, or of poison, before he had learned to select, or of fatigue and restlessness, before he had formed round his habitation grass-plots and arbours? This art, the image of creation, was reserved for that Being alone who bore the impression of the Divinity.

If Providence had abandoned Man to himself, on proceeding from the hands of the Creator, what would have become of him? Could he have said to the plains: Ye unknown forests, shew me the fruits which are my inheritance? Earth, open, and disclose, in the roots buried under thy surface, my destined aliment? Ye plants, on which my life depends, manifest to me your qualities, and supply the instinct which Nature has denied? Could he have had recourse, in his distress, to the compassion of the beasts, and, ready to perish with hunger, have said to the cow: Take me into the number of thy children, and let me share, with thy offspring, the produce of one of thy superfluous teats? When the breath of the North-wind made him shiver with cold, would the wild goat and timid sheep have run at his call to warm him with their fleeces? Wandering, without a protector, and without an asylum, when he heard by night

the howlings of ferocious animals demanding their prey, could he have made supplication to the generous dog, and said to him : Be thou my defender, and I will make thee my slave ? Who could have subjected to his authority so many animals which stood in no need of him, which surpassed him in cunning, in speed, in strength, unless the hand which, notwithstanding his fall, destined him still to empire, had humbled their heads to the obedience of his will ?

How was it possible for him, with a reason less infallible than their instinct, to raise himself up to the very Heavens, to measure the course of the stars, to cross the Ocean, to call down the thunder, to imitate most of the Works and appearances of Nature ? We are struck with astonishment at these things now ; but I am much rather astonished, that a sense of Deity should have spoken to his heart, long before a comprehension of the Works of Nature had perfected his understanding. View him in the state of nature, engaged in perpetual war with the elements, with beasts of prey, with his fellow-creatures, with himself ; frequently reduced to situations of subjection which no other animal could possibly support ; and he is the only being who discovers, in the very depth of misery, the character of infinity, and the restlessness of immortality. He erects trophies ; he engraves the
record

record of his achievements on the bark of trees ; he celebrates his funeral obsequies, and puts reverence on the ashes of his forefathers, from whom he has received an inheritance so fatal.

He is incessantly agitated by the rage of love or of vengeance. When he is not the victim of his fellow-men, he is their tyrant : and he alone knows that Justice and Goodness govern the World, and that Virtue exalts Man to Heaven. He receives, from his cradle, none of the presents of Nature, no soft fleece, no plumage, no defensive armour, no tool, for a life so painful and so laborious ; and he is the only being who invites the Gods to his birth, to his nuptials, and to his funeral obsequies.

However far he may have been misled by extravagant opinions, whenever he is struck by unexpected bursts of joy or grief, his soul, by an involuntary movement, takes refuge in the bosom of Deity. He cries out : Ah, my GOD ! He raises to Heaven suppliant hands, and eyes bathed with tears, in hope of there finding a Father. Ah ! the wants of Man bear witness to the providence of a Supreme Being. He has made Man feeble and ignorant, only that he may stay himself on his strength, and illuminate himself by his light ; and so far is it from being true, that chance, or malignant spirits, domineer over a World, where every

thing concurred to destroy a creature so wretched, his preservation, his enjoyments, and his empire, demonstrate, that, at all times, a beneficent GOD has been the friend, and the protector of human life.

STUDY NINTH.

OBJECTIONS AGAINST THE METHODS OF OUR REASON, AND THE PRINCIPLES OF OUR SCIENCES.

I HAVE displayed, from the beginning of this Work, the immensity of the study of Nature. I there proposed new plans, to assist us in forming an idea of the order which she has established in all her various kingdoms: but, checked by my own incapacity, all that I could presume to promise was, to trace a slight sketch of what exists in the vegetable order. However, before I proceeded to lay down new principles on this subject, I thought myself called upon to refute the prejudices which the World, and our Sciences themselves, might have diffused over Nature, in the minds of my Readers. I have, accordingly, exhibited a faint representation of the goodness of Providence to the age in which we live, and the objections which have been raised against it. I have replied to those objections, in the same order in which I had stated them, pointing out, as I went along, the
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the wonderful harmony which prevails in the distribution of the Globe, abandoned, as some would have it, to the simple Laws of motion and of chance.

I have presented a new theory of the courses of the Tides, of the motion of the Earth in the Ecliptic, and of the Universal Deluge: and I am now going to attack, in my turn, the methods of our Reason, and the Elements of our Sciences, before I proceed to lay down some principles, which may indicate to us a certain path to the discovery of Truth.

But let it be understood, that if, in the course of this Work, and particularly in this article, I have combatted our natural Sciences, it is only so far as system is concerned: I give them full credit on the side of observation. Besides, I highly respect the persons who devote themselves to the pursuit of Science. I know nothing in the world more estimable, next to the virtuous man, than the man of real knowledge, if, however, it be possible to separate the Sciences from Virtue. What sacrifices and privations does not the cultivation of them demand! While the herd of Mankind is growing rich and renowned by agriculture, commerce, navigation, and the arts, it has been frequently seen, that those who cleared the way for all the rest,

rest, lived in indigence themselves, unknown to, and disregarded by, their contemporaries. The man of Science, like the torch, illuminates all around him, and remains himself in obscurity.

I have attacked, then, neither the Learned, whom I honour, nor the Sciences, which have been my consolation through life; but had time permitted, I would have disputed every inch of ground with our methods and our systems. They have thrown us into such a variety of absurd opinions, in every branch of scientific research, that, I do not hesitate to affirm, our Libraries, at this day, contain more of error than of information. Nay, I could venture to wager, that were you to introduce a blind man * into the King's Library, and

* The word in the original is, a *Quinze-vingt*. The *Quinze-vingt* at Paris is a royal foundation of Saint Louis, for the relief of *fifteen score*, that is, three hundred blind persons: hence, in the Parisian phrase, any one, in general, afflicted with the want of sight is denominated a *Quinze-vingt*.

The *King's-Library* is another establishment, which reflects the highest honour on the French Government. It was founded by the famous Cardinal *de Richlieu*; who, however, transferred the credit of it to the Prince. The building is erected in the very centre of the Metropolis, and contains a most magnificent collection of books and manuscripts, in all languages, and relative to every art and science; of drawings, models, mathematical instruments, &c. It is opened on certain days of the week, and

and let him take out any book at a venture, the first page of that book on which he may chance to lay his hand, shall contain an error. How many probabilities should I have in my favour, among romance-writers, poets, mythologists, historians, panegyrists, moralists, naturalists of ages past, and metaphysicians of all ages and of all countries? There is, in truth, a very simple method to check the mischief which their opinions might produce; it is to arrange all the books which contradict themselves, by the side of each other; as these are, in every walk of literature, almost infinite in number, the result of human knowledge, as far as they convey it, will be reduced almost to nothing.

By our very methods of acquiring knowledge, we are deluded into error. First, to succeed in the search of Truth, we ought to be entirely exempted from the influence of passion; and yet, from our earliest infancy, the passions are wilfully set afloat, and thus reason receives an improper bias from the very first. This maxim is laid down as the fundamental basis of all conduct, and of all opinion,

and for a considerable part of the day, for the inspection and use of strangers as well as natives. And, even in Paris, I saw no petty officer, on duty at the Library, hold out his hand for a fee.

H. H.

Make

Make your fortune. The effect of this is, we no longer prize any thing but what has some relation to this appetite. Even natural truths vanish out of sight, because we no longer contemplate Nature, except in machines or books.

In order to our believing in GOD, some person of consequence must assure us there is one. If *Fenelon* says it is so, we admit it, because *Fenelon* was preceptor to the Duke of *Burgundy*, an Archbishop, a man of quality, and addressed by the title of My Lord. We are fully convinced of the existence of GOD by the arguments of *Fenelon*, because his credit reflects some upon ourselves. I do not mean to affirm, however, that his virtue contributed nothing to the force of his reasoning : but no farther than as it stands in connection with his reputation and his fortune ; for were we to meet this same virtue in a water-porter, it's lustre would fade in our eyes. To no purpose would such a one furnish proofs of the existence of a GOD, more unanswerable than all the speculations of Philosophy, in a life labouring under contempt, hard, poor, laborious, exhibiting uniform probity and fortitude, and passed in perfect resignation to the will of the Supreme : these testimonies so positive are of no consideration at all with us ; we estimate their importance from the celebrity which they have acquired. Let some Emperor be dis-
posed

posed to adopt the Philosophy of this obscure man, his maxims will be immediately extolled in every book that is published, and quoted in every academical thesis; engraved portraits of the Author would decorate every pannel, and his bust in plaster of Paris grace every chimney; he should be an *Epictetus*, a *Socrates*, a *John James Rousseau*.

But should a period come, in which arose men of as high reputation as these, in favour with powerful Princes, whose interest it might be, that there should be no GOD, and who, in order to make their court to such Princes, denied his existence; from the same effect of our education, which engaged us to believe in GOD, on the faith of *Fenelon*, *Epictetus*, *Socrates*, and *John James Rousseau*, we would renounce our belief, on the credit of the others, being men of such high consideration, and, besides, so much nearer to us. It is thus our education warps us: it disposes us indifferently to preach the Gospel or the Alcoran, according as our interest is concerned in the one or in the other.

Hence arose this maxim so universal and so pernicious: *Primó vivere, deinde philosophari*—"To live first, and seek wisdom afterward." The man who is not ready to give his life in exchange for wisdom, is unworthy of knowing her. *Juvénal's*

mal's sentiment is much more rational, and deserves rather to be adopted :

Summum crede nefas vitam præferre pudori ;
Et propter vitam, vivendi perdere causas *.

“ The blackest of crimes, believe it, is to prefer life to honour ; and for the sake of a few paltry years of mere existence, to sacrifice that which alone makes life desirable.”

I say nothing of other prejudices which oppose themselves to the investigation of truth, such as those of ambition, which stimulate every one among us to distinguish himself ; and this can hardly be done except in two ways ; either by subverting maxims the most undoubted, and the most firmly established, in order to substitute our own in their place ; or by making an effort to please all parties, from uniting opinions the most contradictory ; and this, taking the two cases together, multiplies the ramifications of error to infinity. Truth has, farther, to encounter a multitude of other obstacles on the part of powerful men, who can make an advantage of error. I shall confine

* Imitated thus :

The worst of crimes, believe it, generous youth,
Is to buy life, by selling sacred truth :
Virtue's the gem of life, the Sage's store ;
But life is death, when honour is no more.

myself

myself to those which are to be imputed to the weakness of our reason, and shall examine their influence on our acquirements in natural knowledge.

It is easy to perceive, that most of the Laws which we have presumed to assign to Nature, have been deduced sometimes from our weakness, sometimes from our pride. I shall take a few instances, as they happen to occur to my thoughts, and which are considered as most indubitably certain. For example, we have settled it, that the Sun must be in the centre of the planets, in order to regulate their motion, because we are under the necessity of placing ourselves in the centre of our personal concerns, for the purpose of keeping an eye over them. But if, in the case of the celestial spheres, the centre naturally belongs to the most considerable bodies, how comes it about that *Saturn* and *Jupiter*, which greatly exceed our Globe in magnitude, should be at the extremity of our vortex ?

As the shortest road is that which fatigues us least, we have taken upon us to conclude, that, in like manner, this must be the plan of Nature. Consequently, in order to spare the Sun a journey of about ninety millions of leagues, which he must every day perform, in giving us light, we set the
Earth

Earth a spinning round it's own axis. It may be so; but if the Earth revolves round itself, there must be a great difference in the space passed through by two cannon-balls, shot off at the same instant, the one toward the East, and the other toward the West; for the first goes along with the motion of the Earth, and the second goes in the opposite direction. While both are flying in the air, and removing the one from the other, each proceeding at the rate of six thousand fathoms in a minute, the Earth, during that same minute, is outflying the first, and removing from the second, with a velocity which carries it along at the rate of sixteen thousand fathoms; this ought to put the point of departure twenty-two thousand fathom behind the ball which is flying to the West, and ten thousand fathom before that which is flying to the East.

I once proposed this difficulty to a very able Astronomer, who considered it as almost an insult. He replied, as the custom of our Doctors is, that the objection had been made long before, and resolved. At length, as I intreated him to have compassion on my ignorance, and to give me the solution, he retailed to me the pretended experiment, of a ball dropped from the top of a ship's mast, when under sail, and which falls on deck close to the mast, notwithstanding the ship's progressive motion.

tion. "The Earth," said he, "carries along, in like manner, the rotation of the two balls, in it's own movement. Were they to be shot off in a perpendicular direction, they would fall back precisely on the point from whence they were emitted." As axioms are not very expensive, and serve to cut short all difficulties, he subjoined this as one: "The motion of a great body absorbs that of a small." If this axiom be founded in truth, replied I, the ball dropped from the top of the mast of a ship under sail, ought not to fall back close to the bottom of the mast; it's motion ought to be absorbed, not by that of the vessel, but by that of the Earth, which is far the greater body. It ought to obey only the direction of gravity; and, for the same reason, the Earth ought to absorb the motion of the bullet which is going along with it toward the East, and force it back into the cannon from which it issued.

I was unwilling to push this difficulty any farther; but I remained, as has frequently happened to me, after the most luminous solutions of our schools, still more *perplexed* than I was before. I began to call in question the truth of not only a system and of an experiment, but what is worse, of an axiom. Not that I reject our planetary system, such as it is given us; but I admit it for the same

same reason which at first suggested it. It is from it's being the best adapted to the weakness of my body, and of my mind. I find, in fact, that the rotation of the Earth, every day, saves the Sun a prodigious journey : but, in other respects, I by no means believe that this system is that of Nature, and that she has disclosed the causes of motion to men, who are incapable of accounting for the movement of their own fingers.

I beg leave to suggest some farther probabilities in favour of the Sun's motion round the Earth. " The Astronomers of Greenwich, having discovered that a star of Taurus has a declination of " two minutes, every twenty-four hours ; that this " star not being dim, and having no train, cannot " be considered as a comet, communicated their " observations to the Astronomers of Paris, who " found them accurate. M. *Messier* was appointed " to make a report of this to the Academy of " Sciences, at their next meeting *."

If the Stars are Suns, here then is a Sun in motion, and that motion is a presumption, at least, that ours may move.

* Extract from the *Courier de l'Europe*, Friday, 4th May, 1781.

The stability of the Earth may be presumed, on the other hand, from this circumstance, that the distance of the Stars never changes with respect to us, which must perceptibly take place, if we performed every year, as is alleged, a round of sixty-four millions of leagues in diameter through the Heavens; for in a space so vast, we must, of necessity, draw nigher to some, and remove from others.

Sixty-four millions of leagues, we are told, dwindle to a point in the Heavens, compared to the distance of the Stars. I am much in doubt as to the truth of this. The Sun, which is a million of times greater than the Earth, presents an apparent diameter of only six inches, at the distance of thirty-two millions of leagues from us. If this distance reduces to a diameter so small, a body so immense, it is impossible to doubt, that double the distance, namely, sixty-four millions of leagues, would diminish it still much more, and reduce it, perhaps, to the apparent magnitude of a Star; and it is far from being impossible, that, on being thus diminished, and on our still removing sixty-four millions of leagues farther, he would entirely disappear. How comes it to pass, then, that when the Earth approaches, or removes to this distance from the Stars in the Firmament, in performing
it's

it's annual circle, no one of those Stars increases or diminishes in magnitude with respect to us.

I submit some farther observations, tending to prove, that the Stars have, at least, motions peculiar to themselves. The ancient Astronomers have observed, in the neck of the Whale, a Star which presented much variety in it's appearances ; sometimes it appeared for three months together, sometimes during a longer interval ; sometimes it's apparent magnitude was greater, sometimes smaller. The time of it's appearances was irregular. The same Astronomers report, that they had observed a new Star in the heart of the Swan, which from time to time disappeared. In the year 1600, it was equal to a Star of the first magnitude ; it gradually diminished, and at length disappeared. M. *Cassini* perceived it in 1655. It increased for five years successively ; it then began to decrease, and reappeared no more. In 1670 a new Star was observed near the head of the Swan. Father *Anselm*, a Carthusian friar, and several other Astronomers, made the observation. It disappeared, and became again visible in 1672. From that period, it was seen no more till 1709, and in 1713 it totally disappeared.

These examples demonstrate, that the Stars not only have motions, but that they describe curves

very different from the circles and the ellipses which we have assigned to the heavenly bodies. I am fully persuaded, that there is among these the same variety of motion, as between those of many terrestrial bodies; and that there are Stars which describe cycloïds, spirals, and many other curves, of which we have not so much as an idea.

I must proceed no farther on this ground, for fear of appearing better informed respecting the affairs of Heaven, than those which are much nearer to us. All that I intended was to expose my doubts and my ignorance. If Stars are Suns, then there must be Stars in motion; and, surely, ours may be in motion as well as they are *.

It

* I now leave the Reader to reflect on the total disappearance of those Stars. The Ancients had observed seven Stars in the Pleiades. Six only are now perceptible. The seventh disappeared at the siege of Troy. *Ovid* says, it was so affected by the fate of that unfortunate city, as, from grief, to cover it's face with it's hand. I find, in the book of *Job*, a curious passage, which seems to preface this disappearance: it is chap. xxxviii. ver. 31. *Numquid conjungere valebis micantes stellas pleiadas, aut gyrum arcturi poteris dissipare?* "Will it be in thy power to unite the brilliant Stars, the Pleiades; and to turn aside the great Bear from it's course?" This is the import of the translation of *M. le Maître de Sacy*. However, if I might venture to give an opinion after that learned man, I would put a different sense on the conclusion of the passage. *Gyrum arcturi dissipare*, means, in my opinion, "to dissipate the attraction of the arctic pole."

It is thus that our general maxims become the sources of error ; for we never fail to charge with disorder whatever seems to recede from our pretended order. That which I formerly quoted, namely, that Nature, in her operations, takes always the shortest road, has filled our Physics with false views innumerable. There is nothing, however, more flatly contradicted by experience. Nature makes the waters of the rivers to meander through the Land, in their progress to the Sea, instead of transmitting them in a straight line. She causes the veins to perform a winding course through the human body ; nay, she has perforated certain bones expressly, in order to afford a passage to some of the principal veins into the interior of the stronger limbs, to prevent their being exposed to injury by external concussions. In a word, she expands a mushroom in one night, but takes a century to bring an oak to perfection. Nature very seldom takes the nearest road, but she always takes that which is best adapted to the purpose.

This rage for generalizing has dictated to us, in every branch of Science, an infinite number of

pole." I here repeat what I have already observed, that the Book of *Job* is replenished with most profound knowledge of Nature.

maxims, sentences, adages, which are incessantly contradicting themselves. It is one of our maxims, that a man of genius catches every thing at a glance, and executes all by one single Law. For my own part, I consider this sublime method of observing and executing, as one of the strongest proofs of the weakness of the human mind. Man never can proceed with confidence but in one single path. As soon as a variety present themselves, he becomes perplexed, and goes astray ; he is at a loss to ascertain which he ought to pursue : that he may make sure of not deviating, he admits only one to be right ; and, once engaged, right or wrong, pride stimulates him forward. The AUTHOR of Nature, on the contrary, embracing in his infinite intelligence, all the spheres of all beings, proceeds to their production by Laws as various as his own inexhaustible conceptions, in order to the attainment of one single end, which is their general good. Whatever contempt Philosophers may express for final causes, they are the only causes which he permits us to know. All the rest He is pleased to conceal from us ; and it is well worthy of being remarked, that the only end which He discloses to our understanding, is also the same with that which he proposes to our virtues.

One of our most ordinary methods, when we catch some effect in Nature, is to dwell upon it,
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at first, from weakness, and afterwards, to deduce from it an universal principle, out of vanity. If after this we can find means, and it is no difficult matter to apply to it a geometrical theorem, a triangle, an equation, were it but an $a + b$, this is sufficient to render it for ever venerable. It was thus that, in the last age, every thing was explained on the principles of the corpuscular philosophy, because it was perceived that some bodies were formed by intus-fusception, or an aggregation of parts. A seasoning of Algebra, which they found means to add to it, had invested it with so much the more dignity, that most of the reasoners of those times understood nothing of the matter. But being indifferently endowed, it's reign was of short duration. At this day, we do not so much as mention the names of a long list of learned and illustrious gentlemen, whom all Europe then concurred in covering with laurels.

Others having found out that air pressed, set to work with every species of machinery to demonstrate that air possessed gravity. Our books referred every thing to the gravity of the air; vegetation, the human temperament, digestion, the circulation of the blood, the phenomena, the ascension, of fluids. They found themselves somewhat embarrassed, it is true, by capillary tubes, in which the fluid ascends, independently of the ac-
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tion of the air. But a solution was found for this likewise; and *woe betide* those, in the phrase of certain Writers, who do not comprehend it! Others applied themselves to the investigation of it's elasticity, and have explained, equally well, all the operations of Nature, by this quality of the air. The universal cry was, now the veil is removed; we have caught her in the fact. But did not the Savage know, when he walked against the wind, that air had both gravity and elasticity? Did he not employ both those qualities in managing his canoe when under sail? I do not object to investigation, if natural effects are applied, after exact calculation, and unequivocal experiment, to the necessities of human life; but they are, for the most part, introduced for the purpose of regulating the operations of Nature, and not our own.

Others find it still more commodious to explain the system of the Universe, without deducing any consequence from it. They ascribe to it Laws which have so much accuracy and precision, that they leave to the divine Providence nothing more to do. They represent the Supreme Being as a Geometrician, or a Mechanist, who amuses himself with making spheres, merely for the pleasure of setting them a spinning round. They pay no regard to harmonies, and other moral causes. Though the exactness of their observations
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may do them honour, their results are by no means satisfactory. Their manner of reasoning on Nature resembles that of a Savage, who, on observing, in one of our cities, the motion of the indexes of a public clock, and seeing, that on their pointing in a certain direction upon the hour-plate, the turrets fell a shaking, crowds issued into the streets, and a considerable part of the inhabitants were put in motion, should thence conclude, that a clock was the principle of all European occupations. This is the defect to be imputed to most of the Sciences, which, without consulting the end of the operations of Nature, perplex themselves in an unprofitable investigation of the means. The Astronomer considers only the course of the Stars, without paying the slightest attention to the relations which they have with the seasons. Chemistry, having discovered in the aggregation of bodies only saline particles, which mutually assimilate, sees nothing but salt as the principle and the object. Algebra having been invented, in order to facilitate calculation, has degenerated into a Science which calculates only imaginary magnitudes, and which proposes to itself theorems only, totally inapplicable to the demands of human life.

From all this results an infinity of disorders, far beyond what I am able to express. The view of
Nature,

Nature, which suggests to Nations the most savage, not only the idea of a GOD, but that of an infinity of Gods, presents to the Philosophers of the day only the idea of furnaces, of spheres, of stills, and of crystallizations.

The Naiads, the Sylvens, Apollo, Neptune, Jupiter, impressed upon the Ancients some respect, at least, for the Works of Creation, and attached them still farther to their Country by a sentiment of religion. But our machinery destroys the harmonies of Nature and of Society. The first is to us nothing but a gloomy theatre, composed of levers, pulleys, weights, and springs; and the second merely a school for disputation. Those systems, we are told, give exercise to the mental faculties. It may be so; but may they not likewise mislead the understanding? But the heart is in no less danger of being depraved. While the head is laying down principles, the heart is frequently deducing consequences. If every thing is the production of unintelligent powers, of attractions, of fermentations, the play of fibres, of masses, we then are subjected to their laws, as all other bodies are. Women and children deduce these consequences. What, in the mean time, becomes of virtue? You must submit, say these ingenious gentlemen, to the Laws of Nature. So then, we must obey the power of gravity; sit down, and walk

walk no more. Nature speaks to us by a hundred thousand voices. Which of these is now sounding in our ears ? What, will you adopt as the rule of your life, the example of fishes, of quadrupeds, of plants, or even of the heavenly bodies ?

There are Metaphysicians, on the contrary, who without paying regard to any one Law of Physics, explain to you the whole system of the Universe, by means of abstract ideas. But this is a proof that their system is not the system of Nature, namely, that with their materials and their method, it would be an easy matter to subvert their order, and to frame another totally different from it, provided one were disposed to take the small trouble which it requires. Nay, a reflection arises out of this, which levels a mortal blow at the pride of human understanding ; it is this, that all these efforts of the genius of Man, so far from being able to construct a World, are incapable of so much as putting a grain of sand in motion.

There are others, who consider the state in which we live as a state of progressive ruin and of punishment. They proceed on the supposition, conformably to the authority of the Sacred Writings, that this Earth once existed with other harmonies. I readily admit what Scripture says on this subject, but I object to the explanations of
Commentators.

Commentators. Such is the weakness of our intellectual powers, that we are incapable of conceiving or imagining any thing beyond what Nature actually exhibits to us. They are grossly mistaken, accordingly, when they affirm, for instance, that, when the Earth was in a state of perfection, the Sun was constantly in the Equator; that the days and nights were perpetually equal; that there was an eternal Spring; that the whole face of the ground was smooth and level, and so on.

Were the Sun constantly in the Equator, I question whether a single spot of the Globe would be habitable. First, the Torrid Zone would be burnt up by his fervent heat, as has been already demonstrated; the two icy Zones would extend much farther than they do at present; the temperate Zones would be at least as cold toward their middle, as they are with us at the vernal Equinox; and this temperature would prevent the greatest part of fruits from coming to maturity. I know not where the perpetual Spring would be; but, if it could any where exist, never could Autumn there exist likewise. The case would be still worse were there neither rocks nor mountains on the surface of the Globe, for not one river, nay not a brook of water would flow over the whole Earth. There would be neither shelter nor reflex,
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to the North, to cherish the germination of plants, and there would be neither shade nor moisture, to the South, to preserve them from the heat. These wonderful arrangements actually exist in Finland, in Sweden, at Spitzberghen, and over the whole northern regions, which become loaded with rocks in proportion as the latitude increases; and they rise, in like manner, in the Antilles, in the Isle of France, and in all the other islands and districts comprehended between the Tropics, where the face of the ground is covered over with rocks, especially toward the Line; in Ethiopia, the territory of which Nature has overspread with vast and lofty rocks, almost perpendicular, which form all around them deep valleys, delightfully shady and cool. Thus, as was before observed, in order to refute our pretended plans of perfection, it is sufficient to admit them.

There is another class of Literati, on the contrary, who never deviate from their track, and who abstain from looking at any thing beyond it, however rich in facts they may be: such are the Botanists. They have observed the sexual parts in plants, and employ themselves entirely in collecting and arranging them, conformably to the number of those parts, without troubling themselves about knowing any thing farther of them. When they have classed them in their heads and in
their

their herbals, into umbellated, into rose-formed, or into tubulous, with the number of their stamina; if to this they are able to affix a parcel of Greek terms, they are possessed, as they imagine, of the complete system of vegetation.

Others of them, to do them justice, go somewhat farther. They study the principles of plants; and in order to attain their object, pound them in mortars, or dissolve them in their alembics. The process being completed, they exhibit salts, oils, earths; and tell you gravely, these are the principles of such and such a plant. For my own part, I no more believe that any one can shew me the principles of a plant in a phial, than he can display those of a wolf, or of a sheep, in a kettle. I respect the mysterious operations of Chemistry; but whenever they act on vegetables, the process destroys them. Permit me to quote the decision which an eminent Physician has pronounced on his own experiments. I mean Doctor *J. B. Chomel*, in the preliminary discourse to his useful Abridgment of the History of common Plants *. “Two thousand analyses nearly,” says he, “of different plants, made by the Chemists of the Royal Academy of Sciences, have afforded us no farther information than this, that

* Vol. i. page 37.

“ from

“ from all vegetables may be extracted a certain
 “ quantity of an acid liquor, more or less of ef-
 “ fential or fetid oil, of salt fixed, volatile, or
 “ concrete, of insipid phlegm, and of earth; and,
 “ in many cases, almost the same principles, and
 “ in the same quantities, from plants whose vir-
 “ tues are extremely different. This very tedious,
 “ and very painful pursuit, accordingly, has
 “ turned out a merely useless attempt toward a
 “ discovery of the effects of plants; and has served
 “ only to undeceive us, respecting the prejudices
 “ which might have been entertained in favour of
 “ such an analysis.” He adds, that the celebrated
 Chemist *Homberg*, having sown the seeds of the
 same plants in two frames, filled with earth, im-
 pregnated with a strong lye, the one of which was
 afterwards watered with common water, and the
 other with water in which nitre had been dissolved,
 these plants re-produced very nearly the same
 principles. Here, then, is our systematic Science
 completely overturned; for it can discover the ef-
 fential qualities of plants, neither by their compo-
 sition nor their decomposition.

Many other errors have been adopted respect-
 ing the Laws of the expansion and the fecunda-
 tion of plants. The Ancients had distinguished,
 in many plants, males and females; and a fecunda-
 tion, by means of emanations of the feminal pow-

der, such as in the date-bearing palm-tree. We have applied this Law to the whole vegetable kingdom. It embraces, no doubt, a very extensive field ; but how many vegetables, besides, propagate themselves by suckers, by slips, by knittings, by the extremities of their branches ! Here are, then, in the same kingdom, various methods of re-production. Nevertheless, when we perceive no longer in Nature, the Law which has once been adopted in our books of Science, we are weak enough to imagine that she has gone astray. We have only one thread, and when it snaps, we conclude, that the system of the Universe must be on the point of dissolution. The Supreme Intelligence disappears from before our eyes, the moment that our own happens to be a little disturbed. I entertain no doubt, however, that the AUTHOR of Nature has established Laws for the vegetable World, now so generally studied, which are still to us entirely unknown. I take the liberty to subjoin on this subject, an observation which I submit to the experience of my Readers.

Having transplanted, in the month of February of the year 1783, some simple violet plants, which had begun to push out small flower-buds ; this transplantation checked their expansion in a manner very extraordinary. These small buds never came into flower, but their ovary having swelled, attained

attained the usual size, and changed into a capsule filled with seeds, without displaying, outwardly or inwardly, either petal, or anthera, or stigma, or any part whatever of the flower. All these buds presented successively the same phenomena in the months of May, of June, and of July, but no one of those violet plants presented the least semblance of a flower. I only perceived in the shooting buds which I opened, the parts which should have composed the flower withered within the calix. I sowed again their seeds which had not been fecundated, and hitherto they have not sprung up. This experiment so far is favourable to the Linnæan system; but it is in another respect a deviation, as it demonstrates the possibility of a plant's producing fruit without having flowered.

It may be here proper to remark, once for all, that physical Laws are subordinate to the Laws of utility, that is, to give an instance, the Laws of vegetation are adapted to the preservation of sensible beings, for whose use they were designed. Accordingly, though the flowering of my violet may have been interrupted, this prevented not the production of its seeds, which were destined to be the subsistence of some animal, whose natural food it is. For this reason, too, the most useful plants, such as the gramineous, are those which have the greatest variety of methods to re-produce themselves.

felves. If Nature, with respect to them, had confined herself rigidly to the Law of florification, they could not multiply, when pastured upon by animals which continually browse on their summits. The same thing takes place with regard to such as grow along the water courses, as reeds and the aquatic trees; willows, alders, poplars, osiers, mangliers, when the waters swell, and bury them in sand, or totally subvert them, as is frequently the case. The shores would remain destitute of verdure, if the vegetables, which are native there, had not the faculty of re-production by means of their own shoots. But the case is different with respect to the vegetable inhabitants of the mountains, as palm-trees, firs, cedars, larches, pines, which are not exposed to similar accidents, and which cannot be propagated by slips. Nay, if you crop off the summit of the palm-tree, it dies.

We likewise find these same laws of adaptation and utility in the generation of animals, to which we ascribe uncertainty, as soon as we perceive variety; or when we apprehend an approximation to the vegetable kingdom by means of imaginary relations, suggested by the perception of effects common to both. Thus, for example, if some of our more delicate plant-insects are viviparous in Summer, it is because their young find, at that season, the temperature and the food which are
adapted

adapted to them on coming into the world; and if they are oviparous in Autumn, it is because the posterity of creatures so delicate could not have survived the Winter, without having been shut up in eggs. For similar reasons, if you tear off a claw from a live crab or lobster, it pushes out another, which springs out of it's body, as a branch out of a tree. Not that this animal re-production is the effect of any mechanical analogy between the two kingdoms: but those animals being destined to live on the shores, among the rocks, where they are exposed to the agitation of the waves, Nature has bestowed on them the faculty of re-producing the limbs exposed to be bruised, or broken off, by the rolling about of rocky substances, as she has given to vegetables, which grow by the waters, the power of re-production by shoots, because they are exposed to the danger of being overwhelmed by inundations.

Medicine has deduced a multitude of errors from those apparent analogies of the vegetable and animal kingdoms. It is sufficient to examine the train of her studies, to be satisfied that they are liable to strong suspicions. She pursues the operations of the soul through the structure of a corpse, and the functions of life in the lethargy of death. If she happens to perceive some valuable property in a vegetable, she exalts it into an uni-

verfal remedy. Listen to her aphorifms. Plants are ufeul to human life: hence ſhe concludes, that a vegetable diet will make a man live for feveral ages. Who is able to enumerate the books, the treatifes, the panegyrics, which have been compoſed on the virtues of plants! Multitudes of patients die, notwithstanding, with their ſtomachs full of thoſe wonderful ſimples. Not that I undervalue their qualities when judiciously applied; but I abſolutely reject the reasonings which attempt to connect the duration of human life with the uſe of a vegetable regimen.

The life of Man is the reſult of all the moral adaptations, and depends much more on ſobriety, on temperance, and the other virtues, than on the nature of aliments. The animals which live entirely on plants, do they attain even ſo much as the age of Man? The deer and wild goats, which feed on the admirable vulnerary herbs of Switzerland ought never to die; nevertheless, they are very ſhort-lived. The bees which ſuck the nectar of their flowers, likewiſe die, and ſeveral of their ſpecies, in the ſpace of one year. There is a limited term fixed for the life of every kind of animal, and a regimen peculiar to it; that of Man alone extends to every variety of aliment. The Tartar lives on raw horſe-fleſh, the Dutchman on fiſh, another nation on roots, another on milk diet;

diet; and in all countries you meet with old people. Vice alone, and mental uneasiness, shorten human life; and I am persuaded, that the moral affections are of such extensive influence, with respect to Man, that there is not one in the whole catalogue of diseases but what owes it's origin to them.

Hear what *Socrates* thought of the systematic Philosophy of his age; for in all ages, she has abandoned herself to the same extravagancies. "He did not amuse himself," says *Xenophon**, "with researches into the mysteries of Nature; or with enquiring in what manner, that which the Sophists call the World was created; nor what irresistible elastic force governs all celestial things: on the contrary, he exposed the folly of those who addict themselves to such contemplations, and demanded, if it was after having acquired a perfect knowledge of human things, that they undertook the investigation of those which are divine; or whether they considered it as a character of true wisdom, to neglect what was within their reach, in order to grasp at objects far above them. He expressed still farther astonishment, that they did not discern the impossibility of Man's comprehending all

* *Xenophon's Memorable Things of Socrates*, book i.

“ those wonders, considering that the persons who
“ had the reputation of being most profoundly
“ skilled in such matters, maintained opinions
“ contradictory to each other, and quarrelled like
“ madmen. For as among madmen, there are
“ some undaunted at the approach of the most
“ formidable calamities, and others affrighted
“ where there is no appearance of danger; in
“ like manner, among those Philosophers, some
“ have maintained, that there is no action which
“ may not be performed in public, nor a word
“ which may not be freely spoken in the presence
“ of the whole World; others, on the contrary,
“ have taught, that all intercourse with men ought
“ to be broken off, and perpetual solitude preferred to society: some have poured contempt on
“ temples and altars, and decried the worship of
“ the Gods; others are such slaves to superstition,
“ as to adore wood, and stone, and irrational animals. And as to the Science of natural things,
“ some have acknowledged but one single being;
“ others have admitted an infinite number: some
“ insist, that all things are in a state of perpetual
“ motion; others, that there is no such thing as
“ motion: some tell you that the World is filled
“ with incessant generations and dissolutions; and
“ others assure you that nothing is generated or
“ destroyed. He said farther, that he would be
“ gladly informed by those ingenious gentlemen,
“ whether

“ whether they entertained the hope of some time
“ or other reducing to practice what they taught,
“ as persons instructed in any art, have it in their
“ power to exercise it at pleasure, either for their
“ own private emolument, or for the benefit of
“ their friends ; and whether they likewise ima-
“ gined, after they had discovered the causes of
“ every thing that comes to pass, that they should
“ be able to dispense winds and rains, and dispose
“ of times and seasons, in subserviency to their
“ necessities ; or if they satisfied themselves with
“ the bare knowledge of those things, without any
“ expectation of advantage from them.”

Not that *Socrates* was unacquainted with Nature, for he had studied her thoroughly ; but he had relinquished the investigation of the causes, entirely in the view of rising into admiration at the results. No one ever had collected more observations on this subject than he had done. He made frequent use of these in his conversations on the divine Providence.

Nature presents to us, on every side, nothing but harmonies, and adaptations to our necessities ; and we will obstinately persist in vain efforts to trace her up to the causes which she employs ; as if we meant to extort from her the secrets of her power. We do not so much as know the most
common

common principles which she sets a working in our hands, and in our feet. Earth, water, air, and fire, are elements, as we say. But under what form must Earth appear, in order to be an element? That stratum called *humus*, which almost every where covers it, and which serves as a basis to the vegetable kingdom, is a refuse of all sorts of substances, of marl, of sand, of clay, of vegetables.

Is it the sand which constitutes it's elementary part? But sand appears to be a secretion from the rock. Is it the rock, then, which is an element? But it has the appearance, in it's turn, of being an aggregation of sand, as we see it to be in masses of free-stone. Whether of the two, sand or rock, was the principle of the other? and which took the precedency in the formation of the Globe? Supposing us possessed of authentic information as to this particular, what ground have we gained? There are rocks formed of aggregations of all sorts. Granite is composed of grains; marbles and calcareous stones, of the paste of shells and madrépores. There are likewise banks of sand, composed of the wreck of all these stones: I have seen the sand of crystal.

Shell-fish, which seem to give us some light respecting the nature of calcareous stone, by no means

means indicate to us the primitive origin of that substance; for they themselves form their shells of the refuse that swims in the Seas. The difficulties increase as you attempt to explain the formation of so many various bodies issuing out of the Earth, and nourished by it. In vain you call to your assistance analogies, assimilations, homogeneities, and heterogeneities. Is it not strange, that thousands of species of resinous, oily, elastic, soft, and combustible vegetables, should differ so entirely from the rugged and stony soil which produces them?

The Siamese Philosophers easily get rid of all embarrassment on the subject, for they admit, in Nature, a fifth element, which is wood. But this supplement is incapable of carrying them very far; for it is still more astonishing, that animal substance should be formed of vegetable, than that this last should be formed of fossil. Which way does it become sensible, living, and impassioned? They admit, I grant, the interposition of the Sun's action. But how is it possible that the Sun should be, in animals, the cause of any moral affection; or, if you like the phrase better, of any passion, when we do not see it exercising a disposing influence even on the component parts of plants? For example, it's general effect is to dry that which is humid. How comes it to pass, then,
that

that in a peach exposed to it's action, the pulp externally should be meltingly plump, and the nut within extremely hard ; whereas the contrary takes place in the fruit of the cocoa-tree, which is replenished with milk inwardly, and clothed externally with a shell as hard as a stone ?

Neither has the Sun more influence on the mechanical construction of animals : their interior parts, which are most constantly moistened with humours, with blood and marrow, are frequently the hardest, such as the teeth and the bones ; and the parts most exposed to the action of his heat are often very soft, as hair, feathers, the flesh, and the eyes. Once more, how comes it to pass, that there is so little analogy between plants tender, ligneous, liable to putrefaction, and the Earth which produces them ; and between the corals and the madrépores of stone, which form banks so extensive between the Tropics, and the sea-water in which they are formed ? To all appearance, the contrary ought to happen : the water ought to have produced soft plants, and the earth solid plants. If things exist thus, there must, undoubtedly, be more than one good reason for it ; I think I have a glimpse of a very tolerable one : it is this, that if these analogies actually took place, the two elements would in a short time become uninhabitable ; they would soon be overwhelmed
by

by their own vegetation. The Sea would be incapable of breaking madrépores of wood, and the air of dissolving forests of stone.

The same doubts might be started, respecting the nature of Water. This element, we allege, is formed of small globules, which roll one over another; that it is to the spherical form of it's elementary particles we ought to ascribe it's fluidity. But if these are globules, there must be between them intervals and vacuities, without which they could not be susceptible of motion. How comes it to pass, then, that water is incompressible? If you apply to it a strong compressing power in a tube, it will force it's way through the pores of that tube, though it be of gold; and will burst it, if of iron. Employ what efforts you please, you will find it impossible to reduce it to a smaller size. But so far from knowing the form of it's component parts, we cannot so much as determine that of the combined whole. Does it consist in being expanded into invisible vapours in the air, as the dew, or collected into mist in the clouds, or consolidated into masses in the ice, or finally, in a fluid state, as in the rivers. Fluidity, it is said, forms one of it's principal characters. Yes, because we drink it in that state, and because, under this relation, it interests us the most. We determine it's principal character, as we do that of all
the

the objects of Nature, for the reason which I have already suggested, from our own most craving necessity; but this very character appears foreign to it: for it owes it's fluidity only to the action of the heat; if you deprive it of this, it changes into ice. It would be very singular, should it be made to appear, after all our fundamental definitions, that the natural state of water was to be solid, and that the natural state of earth was to be fluid: now this must actually be the case, if water owes it's fluidity only to heat, and if earth is nothing but an aggregation of sands united by different glues, and attracted to a common centre, by the general action of gravity.

The elementary qualities of air, are not of more easy determination. Air, we say, is an elastic body: when it is shut up in the grains of gunpowder, the action of fire dilates it to such a degree, as to communicate to it the power of hurling a globe of iron to a prodigious distance. But how could it have been, with all this elasticity, compressed into the grains of a crumbling powder? If you put even any liquid substance into a state of fermentation in a flask, a thousand times more air will be separated from it, than you could force into the vessel without breaking it. How could this air be confined in a substance soft and fluid, without disengaging itself by its own action?

The

The air when loaded with vapours, we farther say, is refrangible. The farther we advance to the North, the more elevated does the Sun appear over the Horizon, above the place which he actually occupies in the Heavens. The Dutch mariners, who passed the Winter of 1597, in Nova-Zembla, after a night of several months, saw the Sun re-appear fifteen days sooner than they expected his return. All this is very well. But if vapours render the air refrangible, why is there no Aurora, nor twilight, nor any durable refraction of light whatever, between the Tropics, not even on the Sea, where so many vapours are exhaled, by the constant action of the Sun, that the Horizon is sometimes quite involved in mist by them.

The light is not refracted, says another Philosopher, by the vapours, but by the cold ; for the refraction of the Atmosphere is not so great at the end of Summer, as at the end of Winter, at the autumnal Equinox, as at the vernal.

I admit the truth of this observation ; however, after very hot days in Summer, there is refraction to the North, as well as in our temperate Climates, and there is none between the Tropics : the cold, therefore, does not appear to me to be the mechanical cause of refraction, but it is the final cause of it.

it. This wonderful multiplication of light, which increases in the Atmosphere, in proportion to the intenseness of the cold, is, in my apprehension, a consequence of the same Law which transmits the Moon into the northern signs, in proportion as the Sun forsakes them, and which causes her to illuminate the long nights of our Pole, while the Sun is under the Horizon; for light, be of what sort it may, is warm. These wonderful harmonies are not in the nature of the Elements, but in the will of HIM who has established them in subordination to the necessities of beings endowed with sensibility.

Fire presents to us phenomena still more incomprehensible. First of all, Is fire matter? Matter, according to the definitions of Philosophy, is that which is divisible in length, breadth, and depth. Fire is divisible only in perpendicular length. Never will you divide a flame, or a ray of the Sun, in it's horizontal breadth. Here, then, is matter divisible only in two dimensions. Besides, it has no gravity, for it continually ascends; nor levity, for it descends, and penetrates bodies ever so much below it. Fire, we are told, is contained in all bodies. But, being of a consuming nature, How does it not devour them? How can it remain in water without being extinguished?

These

These difficulties, and several others, induced *Newton* to believe that fire was not an element, but certain subtile matter put in motion. Friction, it is true, and collision, elicit fire from several bodies. But how comes it, that air and water, though agitated ever so much, never catch fire? Nay, How comes it that water even gets cold by motion, though it's fluidity is entirely owing to it's being impregnated by fire? Contrary to the nature of all other motions, Wherefore does that of fire go on in a constant state of propagation, instead of meeting a check. All bodies lose their motion by communicating it. If you strike several billiard balls with one, the motion is communicated among them, it is divided and lost. But a single spark of fire disengages from a piece of wood, the igneous particles, or the subtile matter if you will, which are contained in it, and the whole together increase their rapidity to such a degree, as to make one vast conflagration of a whole forest.

We are not better acquainted with the negative qualities. Cold, they tell us, is produced by the absence of heat: but if cold is merely a negative quality, How is it capable of producing positive effects? If you put into water a bottle of iced wine, as I have seen done in *Russia*, oftener than

once, you see, in a short time, ice of an inch in thickness cover the outside of the bottle. A block of ice diffuses cold all over the surrounding atmosphere. Darkness, nevertheless, which is a privation of light, diffuses no obscurity over surrounding light. If you open, in a day of Summer, a grotto at once dark and cool, the surrounding light will not be in the least impaired by the darkness which it contained; but the heat of the adjacent air will be perceptibly diminished by the cold air which issues from it. I am aware of the reply; it will be said, if there is no perceptible obscuration in the first case, it is owing to the extreme rapidity of light, which replaces the darkness; but this would be increasing the difficulty, instead of removing it, by supposing that darkness, too, has positive effects, which we have not time now to animadvert upon.

It is, however, on such pretended fundamental principles, that most of our systems of Physics are reared. If we are in an error, or in a state of ignorance, at the point of departure, it cannot be long before we go astray on the road; and it is really incredible with what facility, after having laid down our principles so slightly, we repay ourselves in consequences, in vague terms, and in contradictory ideas.

I have

I have seen, for example, the formation of thunder explained, in highly celebrated physical tracts. Some demonstrate to you, that it is produced by the collision of two clouds, as if clouds, or foggy vapours, ever could produce a collision ! Others gravely tell you, that it is the effect of the air dilated by the sudden inflammation of the sulphur and of the nitre which float in the air. But, in order to it's being capable of producing it's tremendous explosions, we are under the necessity of supposing, that the air was confined in a body which made some resistance. If you set fire to a great mass of gun-powder in an unconfined situation, no explosion follows. I know very well that the detonation of thunder has been imitated, in the experiment of fulminating powder ; but the materials employed in the composition of it have a sort of tenacity. They undergo, on the part of the iron ladle which contains them, a resistance against which they sometimes act with so much violence as to perforate it. After all, to imitate a phenomenon is not to explain it. The other effects of thunder are explained with similar levity. As the air is found to be cooler after a thunder-storm, the nitre, we are told, which is diffused through the Atmosphere, is the cause of it ; but was not that nitre there before the explosion, when we were almost suffocated with heat ? Does nitre cool only when it is set on fire ? According to this mode of

reckoning, our batteries of cannon ought to become glaciers in the midst of a battle, for a world of nitre is kindled into flame on such occasions; they are under the necessity, however, of cooling the cannon with vinegar; for, after having been fired off twenty times, in quick succession, it is impossible to apply your hand to the piece. The flame of the nitre, though instantaneous, powerfully penetrates the metal, notwithstanding its thickness and solidity.

The heat, it is true, may likewise be occasioned by the interior vibration of the parts. Whatever may be in this, the cooling of the air, after a thunder-storm, proceeds, in my opinion, from that stratum of frozen air which surrounds us, to the height of from twelve to fifteen hundred fathoms; and which, being divided and dilated at its base, by the fire of the stormy clouds, flows hastily into our Atmosphere. Its motion determines the fire of the thunder, to direct itself, contrary to its nature, toward the Earth. It produces still farther effects, which neither time nor place permit me at present to unfold.

It was affirmed, in the last age, that the Earth was drawn out at the Poles; and we are now positively told, that it is flattened there. I shall not at present enter into an examination of the principles

ciples from which this last conclusion has been deduced, and the observations on which it has been supported. The flattening of the Earth at the Poles has been accounted for from a centrifugal force, to which likewise it's motion through the Heavens has been ascribed; though this pretended force, which has increased the diameter of the Earth at the Equator, has not the power of raising so much as a straw into the air.

The flattening of the Poles, they tell us, has been ascertained, by the measurement of two terrestrial degrees, made at a vast expense, the one in Peru, near the Equator, and the other in Lapland, bordering upon the polar Circle *. Those experiments were made, undoubtedly, by men of very great capacity and reputation. But persons of at least equal capacity, and of a name as high in the republic of Science, had demonstrated, upon other principles, and by other experiments, that the Earth was lengthened at the Poles. *Cassini* estimates at fifty leagues, the length by which the axis of the Earth exceeds it's diameters, which gives to each of the Poles twenty-five leagues of elevation over the circumference of the Globe. We

* It is evident, that the conclusion, from those very measurements, ought to have been, that the Earth is lengthened at the Poles. See the Explanation of the Plates in vol. i.

shall certainly enlist under the banner of this illustrious Astronomer, if we consider the testimony of the eye as of any weight; for the shade of the Earth appears oval over it's Poles, in central eclipses of the Moon, as was observed by *Tycho Brahe* and *Kepler*. These names are a host in themselves.

But without considering any name as an authority, where natural truths are concerned, we may conclude, from simple analogies, the elongation of the axis of the Earth. If we consider, as has been already said, the two Hemispheres as two mountains, whose bases are at the Equator, the summits at the Poles, and the Ocean, which alternately flows from one of these summits, as a great river descending from a mountain, we shall have, under this point of view, objects of comparison which may assist us in determining the point of elevation from which the Ocean takes it's rise, by the distance of the place where it's course terminates. Thus the summit of Chimboraco, the most elevated of the Andes of Peru, out of which the river of the Amazons issues, having a league and one-third nearly of elevation, above the mouth of that river, which is distant from it, in a straight line, about twenty-six degrees, or six hundred and fifty leagues, it may be thence concluded, that the summit of the Pole must be elevated above the
circumference

circumference of the Earth nearly five leagues, in order to have a height proportioned to the course of the Ocean, which extends as far as the Line, ninety degrees distant, that is to say, two thousand, two hundred and fifty leagues, in a straight line.

If we farther consider, that the course of the Ocean does not terminate at the Line, but that when it descends in Summer from our Pole, it extends beyond the Cape of Good-Hope, as far as to the eastern extremities of Asia, where it forms the current known by the name of the westerly Monsoon, which almost encompasses the Globe, under the Equator, we shall be under the necessity of assigning to the Pole, from which it takes its departure, an elevation proportioned to the course which it is destined to perform, and of tripling, at least, that elevation, in order to give its waters a sufficient declivity. I put it down, then, at fifteen leagues: and if to this height we add that of the ices which are there accumulated, the enormous pyramids of which over icy mountains, have sometimes an elevation of one-third above the heights which support them, we shall find that the Pole can hardly have less than an elevation of the twenty-five leagues above the circumference which *Cassini* assigned to it.

Obelisks of ice ten leagues high, are not disproportioned to the centre of cupolas of ice two thousand leagues in diameter, which, in Winter, cover our northern Hemisphere; and which have likewise, in the southern Hemisphere, in the month of February, that is, in the very Midsummer of that Hemisphere, prominent borders, elevated like promontories, and three thousand leagues, at least, in circumference, according to the relation of Captain *Cook*, who coasted round them in the years 1773 and 1774.

The analogy which I establish between the two Hemispheres of the Earth, the Poles, and the Ocean which flows from them, and two mountains, their peaks, and the rivers which there have their sources, is in the order of the harmonies of the Globe, which exhibits a great number of similar harmonies on a smaller scale in the Continents, and in most islands, which are Continents in miniature.

It would appear, that Philosophy has, in all ages, affected to find out very obscure causes, in order to explain the most common effects, in the view of attracting the admiration of the vulgar, who, in fact, scarcely ever admire any thing but what they do not comprehend. She has not failed
to

to take the advantage of this weakness of mankind, by infolding herself in a pomposity of words, or in the mysteries of Geometry, the better to carry on the deception. For how many ages did she ring in our schools, the horror of a *vacuum* which she ascribed to Nature? How many sagacious pretended demonstrations of this have been given, which were to crown their authors with never-fading laurels, but which are now gone to the land of forgetfulness?

She disdains, on the other hand, to dwell on simple observations, which bring down to the level of every capacity, the harmonies which unite all the kingdoms of Nature. For example, the Philosophy of our day refuses to the Moon all influence over vegetables and over animals. It is, nevertheless, certain, that the most considerable growth of plants takes place in the night-time; nay, that there are several vegetables which flower only during that season; that numerous classes of insects, birds, quadrupeds, and fishes, regulate their loves, their hunting matches, and their peregrinations according to the different phases of the orb of night. But what, degrade Philosophers to the experience of gardeners and fishermen! What, condescend to think and talk like such groundlings!

If

If Philosophy denies the influence of the Moon over the minuter objects of the Earth, she makes it up amply, by conferring on her a very extensive power over the Globe itself, without being over-scrupulous about the self-contradiction. She affirms, that the Moon, in passing over the Ocean, presses upon it, and thus occasions the flux of the tides on it's shores. But how is it possible that the Moon should compress our Atmosphere, which only extends, they say, to a score of leagues, at most, from us? Or, admitting a subtile matter, and possessed of great elasticity, which should extend from our Seas as far as to the globe of the Moon, how could this matter be compressed by it, unless you suppose it confined in a channel? Must it not, in it's actual state, extend to the right and to the left, while the action of the planet found it impossible to make itself felt on any one determinate point of the circumference of our Globe?

Besides, why does not the Moon act on lakes, and seas of small extent, where there are no tides? Their smallness ought no more to exempt them from the influence of her gravitation, than deprive them of the benefit of her light. Why are tides almost imperceptible in the Mediterranean? Wherefore do they undergo, in many places, intermittent movements, and retardations of two or three days? Wherefore, in a word, toward the North,
do

do they come from the North, from the East, or from the West, and not from the South, as was observed, with surprize, by *Martens*, *Barents*, *Linschotten* and *Ellis*, who expected to see them come from the Equator, as on the coasts of Europe?

The principal movements of the Sea, it must be allowed, take place, in our Hemisphere, at the same times with the principal phases of the Moon; but we ought not from thence to conclude their necessary dependance, and still less explain it by Laws which are not demonstrated. The Currents and the Tides of the Ocean proceed, as I think I have proved, from the effusion of the ices of the Poles; which depend, in their turn, on the variety of the course of the Sun, as he approaches less or more toward either Pole: and as the phases of the Moon are themselves regulated by the course of the Orb of Day, this is the reason why both take place at the same time.

Farther, the Moon when full has, as we have already observed, an effective and evaporating warmth: she must act, therefore, on the polar ices, especially when at the full *. The Academy

* This observation was made more than sixteen hundred years ago. "The Moon produces thaw; dissolving all ices "and frosts by the humidity of her influence." *Pliny's Natural History. Book ii. chap. 101.*

of Sciences formerly maintained that her light did not warm, after experiments made on her rays, and on the ball of a thermometer, with a burning mirror. But this is not the first error into which we have been betrayed by our books and our machinery, as we shall see when we come to speak of the decomposition of the solar ray by the prism. Neither is it the first time that an assembly of Literati have, without examination, adopted an opinion on the authority of persons who made experiments with much formality and stateliness. And this is the way that errors get into vogue. The one in question has, however, been completely refuted, first at Rome, and afterward at Paris, by a very simple experiment. Some one took a fancy to expose a vessel full of water to the light of the Moon, and to place one similar to it in the shade. The water in the first vessel was evaporated much sooner than that in the second.

To no purpose do we exert all our industry and ingenuity; we can lay hold of nothing in Nature, except results and harmonies: first principles universally escape us. And, what is worst of all, the methods of our Sciences have exercised a pernicious influence on our morals and on religion. It is very easy to mislead men with respect to an intelligence which governs all things, when nothing is presented to them as first causes but mechanical means.

means. Alas ! it is not by these that we shall be able to find our way toward that Heaven, which we pretend to know so well. The greatest of Mankind have cast an eye thitherward as their last asylum. *Cicero* flattered himself with the hope of being, after death, an inhabitant of the Stars ; and *Cesar*, from that elevation, to preside over the destiny of Rome. An infinite number of other men have limited their future happiness to a superintendence of mausoleums, groves, fountains ; and others to a re-union with the objects of their loves. As for us, what are we now hoping for from Earth and from Heaven, where we see nothing beyond the levers of our pitiful machines ?

How ! as the reward of our virtues, is our destination to mount no higher than this, to be confounded with the elements ! What, thy soul, O sublime *Fenelon* ! to be exhaled in inflammable air ; and to have had on the Earth the sentiment of an order which did not exist even in the Heavens ! How, among those Stars so luminous, is there nothing but material Globes ; and in their motions, so constant and so varied, nothing but blind attractions ? How ! Every thing around us insensible matter and no more ; and intelligence given to Man, who could give himself nothing, only to render him miserable ! How ! and can we have been deceived by the involuntary sentiment
which

which makes us raise our eyes to Heaven, in the agony of sorrow, there to solicit relief! The animal on the point of closing his career, abandons himself to his natural instincts. The stag at bay seeks refuge in the most sequestered spot of the forests, content to yield up the roving spirit which animates him, under their hospitable shades. The dying bee forakes the flowers, returns to expire at the door of her hive, and to bequeath her social instinct to her beloved Republic. And Man, following the bent of his reasoning powers, can he no where find, in the widely extended universe, any thing worthy of receiving his departing sighs; not even inconstant friends, nor selfish kindred, nor an ungrateful Country, nor a soil stubborn to all his labours, nor a Heaven indifferent to crimes and to virtue?

Ah! it is not thus that Nature has apportioned her gifts. We bewilder ourselves with our vain Sciences. By driving the researches of our understanding up to the very principles of Nature, nay, of DEITY, we have stifled, in the heart, all feeling of both the one and the other. The same thing has befallen us which once befel a peasant who was living happily in a little valley in the heart of the Alps. A brook, which descended from those mountains, fertilized his garden. For a long time he adored, in tranquillity, the beneficent

cent Naiad who kept his stream perpetually flowing; and who increased its quantity and its coolness as the Summer's heat increased. One day a fancy struck him, that he would go and discover the place where she concealed her inexhaustible urn. To prevent his going astray, he begins with pursuing upward the track of his rivulet. By little and little he rises upon the mountain. Every step he takes, in ascending, discovers to him a thousand new objects; plains, forests, rivers, kingdoms, boundless Oceans. Transported with delight, he proceeds in flattering hope of speedily reaching the blessed abode where the Gods preside over the destiny of this World. But, after a painful scramble, he arrives at the bottom of a tremendous glacier. He no longer sees any thing around him but mists, rocks, torrents, precipices. All, all has vanished. Sweet and tranquil valley, humble roof, beneficent Naiad! his patrimony is now reduced to a cloud, and his divinity to an enormous mass of ice.

It is thus that Science has conducted us through seductive paths, to a termination so fearful. She drags after her, in the train of her ambitious researches, that ancient malediction pronounced against the first man who should dare to eat the fruit of her forbidden tree*, “Behold, the man

* Genesis, chap. iii. ver. 22.

“ is become as one of us, to know good and evil.” He shall not, therefore, “ put forth his hand, “ and take also of the tree of life, and eat, and live “ for ever.” What literary, political, and religious squabbles have our pretended Sciences excited ! How many men has she prevented from living even a single day !

The sublime genius and the pure spirit of *Newton*, assuredly, could not have stood still at the boundary prescribed to a vulgar mind. On observing the clouds resorting from every quarter to the mountains which separate Italy from the rest of Europe, he would have inferred the attraction of their summits, and the direction of their chains, conformably to the basins of the Seas, and to the courses of the winds : he would thence have inferred equivalent dispositions for the different summits of the Continent and of the Islands : he would have seen the vapours arising out of the bosom of the Seas of America, and conveying, through the air, fecundity to the centre of Europe, fixing themselves in solid ice on the lofty pinnacles of the rocks, in order to cool the Atmosphere of hot countries ; undergoing new combinations, to produce new effects ; and returning in a fluid state, to wash their former shores, diffusing, in their mysterious progress, unlimited abundance, in a thousand different channels. He would have observed,
with

with admiration, the constant impulsion communicated to so many various movements, by the action of one single luminary, the Sun, placed at the distance of thirty-two millions of leagues: and, instead of fruitlessly rambling after the habitation of a Naiad, at the summit of the Alps, he would have prostrated himself before that GOD, whose providence embraces the concerns of a whole Universe.

In order to study Nature with understanding, and to advantage, all the parts must be viewed in their harmony and connection. For my part, I, who do not pretend to be a *Newton*, am determined never to leave the borders of my rivulet, I shall set up my rest in my humble valley, and employ myself in culling some herbs and flowers; happy if I am able to form of them some garlands to decorate the entrance of that rustic Temple, which my feeble hands have presumed to rear to the Majesty of Nature! *

* The system of the harmonies of Nature, which I am proceeding to unfold, is, in my opinion, the only one which is within the reach of Man. It was first displayed by *Pythagoras* of Samos, who was the father of Philosophy, and the founder of that sect of Philosophers who have been transmitted to us by the name of Pythagoreans. Never did a succession of men arise so enlightened, as those Sages were, in the natural Sciences; and none whose discoveries reflect higher honour on

the human understanding. There existed, at that time, Philosophers, who maintained that water, fire, air, atoms, were the principles of things. *Pythagoras* insisted, in opposition to this doctrine, that the principles of things were the adaptations and the proportions of which the harmonies were composed, and that goodness and intelligence constituted the nature of GOD.

He was the first who gave to the Universe the epithet of κόσμος, *mundus*, because of its order. He maintained that it was governed by a Providence ; a sentiment perfectly conformable to the tenor of our Sacred Books, and to experience. He invented the five Zones, and the obliquity of the Zodiac. He taught that the Torrid Zone was habitable. He ascribed earthquakes to the water. In fact, their focuses, as well as those of volcanos, as we have already indicated, are always in the vicinity of the Sea, or of some great lake. He believed that each of the Stars was a World, containing an Earth, an Air, and a Heaven ; and even in his time, this had been an anciently received opinion ; for it is to be found in the verses of *Orpheus*. Finally, he discovered the square of the hypothenuse, which has served as a basis to an infinite number of geometrical theorems and solutions.

Philolaüs, of Crotona, one of his disciples, maintained, that the Sun received the fire diffused over the Universe, and re-iterated it, which affords a better explanation of his nature than the perpetual emanations of light and heat which we ascribe to him, without reparation, and without exhaustion. He held that Comets were Stars, which re-appeared after a certain revolution. *Æcetes*, another Pythagorean, maintained the existence of two Continents, that which we inhabit, and one opposite to it ; an idea applicable only to America.

These Philosophers believed, that the soul of Man was a harmony composed of two parts ; the one reasonable, the other
irrational.

irrational. They placed the first in the head, and the other round the heart. They contended for it's immortality; and taught, that at the death of the man, his soul returned to the Soul of the Universe. They approved of divination by dreams and augury, and condemned that which is performed by means of sacrifices. They had such a strong sense of humanity, that they abstained from shedding the blood even of animals, and from eating their flesh.

Nature rewarded their virtues, and the gentleness of their manners, by innumerable discoveries, and bestowed on them the glory of having as followers, *Socrates*, *Plato*, *Archytas* of Tarentum, who invented the screw, *Xenophon*, *Epaminondas*, who was educated by *Lyfis* the Pythagorean, and the good King *Numa*, who taught the Tuscan priests to conjure down the thunder: in a word, she conferred on them all the lustre that Philosophy, Literature, the Military Art, or Royalty itself, can communicate to the most favoured of mortals.

Pythagoras has been calumniated, as having given encouragement to certain unmeaning superstitions; among others, abstinence from the use of beans, &c. But, as truth is frequently under the necessity of presenting herself to men under a veil, the great Philosopher, under this allegory, conveyed to his disciples an advice to abstain from public employments, because it was then the custom to make use of beans, in voting at the election of Magistrates.

A very celebrated Writer, of modern times, who seems to look with an evil eye on every man of illustrious reputation, has presumed to attack the character of *Xenophon*, in whom were united almost all the eminent qualities which can dignify human nature; piety, purity of manners, military skill and valour, and eloquence. His style is so sweetly flowing, that the Greeks bestowed on him the appellation of the Athenian Bee.

This great man has been lately censured, on the ground of that celebrated retreat, by which he brought back ten thousand Greeks into their own Country, from the very extremity of Persia, having performed a march of eleven hundred leagues through a hostile country, and amidst foes innumerable.

It has been asserted, by a man of great learning, that the retreat of this renowned General, was an effect of the goodness, or the piety, of *Artaxerxes*; and he has, of consequence, treated the route which *Xenophon* pursued, by the north of Persia, as a superfluous precaution.—But is it credible that the King of Persia, intentionally, shewed indulgence to the Greeks, when we know, that, by a perfidious piece of cruelty, he had put to death twenty-five of their chief men? How was it possible for those Greeks to have returned by the same road which they went, considering that every thing in this track had been put in motion to intercept them, and that the Persians had, through it's whole extent, destroyed the villages? *Xenophon* defeated all their precautions, by directing his march through a track of which they had no foresight.

For my own part, I consider this military expedition as the most illustrious that ever was achieved; not only from the innumerable conflicts, crossings of rivers, forced marches over mountains, in the face of myriads upon myriads of enemies, through which it was accomplished: but because it was not sullied by a single act of injustice, and had no other object in view but the preservation of citizens. All that is held in high renown among the Warriors of Antiquity, have considered the retreat of the ten thousand as a master-piece in the military art. There is a single expression transmitted to us, which will for ever cover it with glory, uttered in an age, and among a People, by which the Science of War was carried to the height of perfection, and in a situation which admitted not of dissimulation: I mean an expression of *Anthony*, when entangled in the country
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of the Parthians. That General, who possessed great military talents, and had at that time the command of an army of a hundred and thirteen thousand men, of whom sixty thousand were actually Roman citizens, obliged, as *Xenophon* was, to make a retreat in the face of the Parthians, and twenty times on the point of failing in his attempt, frequently exclaimed, with a sigh ! *O the ten thousand !* (See *Plutarch*.)

STUDY TENTH.

OF SOME GENERAL LAWS OF NATURE,

AND, FIRST,

OF PHYSICAL LAWS.

WE shall divide these Laws into Laws *physical*, and Laws *moral*. We shall first examine, in the sequel of this Volume, some physical Laws common to all the Kingdoms of Nature ; and, in the following Study, shall make the application of them to plants, in conformity to the Plan proposed in the commencement of this Work. We shall, afterwards, proceed to the consideration of *moral* Laws ; and shall endeavour to unfold in these, as well as in the *physical* Laws, the means of diminishing the sum of human wretchedness.

I must make frequent appeals to the candor of my Readers. I am presuming to open a path hitherto unattempted. I dare not flatter myself with the belief, that my progress and success keep pace

with the ardor of my imagination, and the anticipations of my heart. But the imperfect materials, which I have busied myself in collecting, may, perhaps, one day, assist men of greater ability, and in a happier situation, in raising to Nature a temple more worthy of her. Recollect, my dear Reader, that all I promised you was the frontispiece and the ruins of it.

OF CONFORMITY.*

Though Conformity be a perception of our reason, I place it at the head of physical Laws, be-

* I do not know any single word in our language which expresses closely the import of the French word *convenance*. It signifies *suitableness*, *correspondence*, the *exact* adaptation of one thing to another. I employ the term *conformity*, as coming the nearest to our Author's idea of any one that occurred to my mind. Whoever has attempted translation must, frequently, have felt the difficulty of rendering certain *words* by exactly equivalent *words*, though he was at no loss where general meaning and expression were concerned; for there is no perfect *convenance* between language and language. I wish it to be understood, then, that wherever the word *conformity* occurs, in the immediate sequel of this Translation, the meaning is, a complete coincidence, congruity, or tallying of object with object, as a bone fitted to it's socket, as the undulations of a paper check to those of it's counter-check, as eye to eye, hand to hand, foot to foot; and it applies equally to natural and to moral objects.

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cause

cause it is the first feeling which we endeavour to gratify in examining natural objects. Nay, there is a connection so intimate between the physical character of those objects, and the instinct of every being possessed of sensibility, that a colour, simply, is sufficient to rouse the passions of animals. A red object puts the bull into a rage, and suggests to most fowls and fishes the idea of prey. The objects of Nature display, in Man, a feeling of a higher order, independent of his wants; it is that of conformity. It is by means of the multiplied conformities of Nature that Man has formed his own reason; for *reason* means nothing else but the *relation*, or *conformity*, of things that exist. Thus, for example, if I examine a quadruped, the eye-lids, which it can raise or let fall, at pleasure, present to me conformities with light; when I look at the form of his feet, I see a conformity to the soil which he is designed to inhabit. It is impossible for me to conceive a determinate idea of these, without combining, on the subject, various feelings of conformity, or of the want of it. Nay, the most material objects, and such as have not, in strictness of speech, any decided form, cannot present themselves to us without those intellectual relations. A rustic grotto, or a steep rock, please or give pain, according as they present to us the ideas of repose or of obscurity, of perspective or of precipice.

Animals

Animals have a sensibility only of objects which have particular conformities to their wants. It may be affirmed that they have, in this respect, a share of reason as perfect as our own. Had *Newton* been a bee, he could not, with all his geometry, have constructed his cell in a hive, without giving it, as the honey-bee has done, six equal partitions. But Man differs from animals, in his capacity of extending this sentiment of conformity to all the relations of Nature, however foreign they may be to his personal demands. It is this extension of reason which has procured for him, by way of eminence, the denomination of a rational animal.

It is unquestionably true, that if all the particular rationality of all animals were united, the sum would probably transcend the general reason of Man ; for human reason has devised most of its arts and crafts, entirely from an imitation of their productions ; besides, all animals come into the world with their peculiar industry, whereas Man is under the necessity of acquiring his, at the expense of much time and reflection ; and, as I have just observed, by imitating the industry and skill of another. But Man excels them, not only by uniting, in himself alone, the intelligence scattered over all the rest, but by his capability of rising upward to the source of all conformities,
namely,

namely, to GOD himself. The only character, which essentially distinguishes Man from the animal, is this, He is a religious Being.

No one animal partakes with him of this sublime faculty. It may be considered as the principle of human intelligence. By it Man is exalted above the instinct of the beasts, so as to be enabled to form a conception of the general plans of Nature; and which led him to suppose an order of things, from having caught a glimpse of an Author. By it he was emboldened to employ fire as the first of agents, to cross the Ocean, to give a new face to the Earth by agriculture, to subject all animals to his empire, to establish Society on the basis of a religion, and to attempt to raise himself up to DEITY by his virtues. It was not Nature, as is commonly believed, which first pointed out GOD to Man, but it is a sense of the DEITY, in Man, which has indicated to him the order of Nature. The Savages are religious, long before they are Naturalists.

Accordingly, by the sentiment of this universal conformity, Man is struck with all possible conformities, though they may be foreign to him. He takes an interest in the history of an insect; and if his attention is not engaged in behalf of all the insects which surround him, it is because he perceives

perceives not their relations, unless there be some *Reaumur* at hand to display them to him; or else, the constant habit of seeing them renders them insipid; perhaps it may be some odious or contemptible prejudice; for he is affected still more by moral than by physical ideas, and by his passions more than by his reason.

We shall farther remark, that all the sentiments of conformity spring up in the heart of Man, at the sight of some useful end, which, frequently, has no manner of relation to his own personal wants: it follows, that Man is naturally good, for this very reason, that he is rational; seeing the aspect alone of a conformity, though entirely foreign to him, communicates a sense of pleasure. It is from this natural sentiment of goodness, that the sight of a well-proportioned animal conveys to us agreeable sensations, which increase in proportion as the creature unfolds its instinct. We love to see a turtle, even in an aviary; but that bird pleases still more, when at large in the forest, uttering the murmurs of love from the top of an elm, or when we perceive her busily constructing in it a nest for her young, with all the solicitude of maternal tenderness.

Once more, it is from a result of this natural goodness that want of conformity communicates a
painful

painful sensation, which is always excited at sight of any thing incongruous. Thus we are shocked on looking at a monster. It gives us pain to see an animal wanting a foot or an eye. This feeling is independant of every idea of pain relatively to ourselves, let Philosophers say what they will ; for we suffer in such a case, though we are assured that the animal came into the world in that defective state. We are pained at the sight of incongruity, even in insensible objects. Withered plants, mutilated trees, an ill-afforted edifice, hurt our feelings. These sensations are perverted, or suppressed, in Man, only by prejudice, or by education.

OF ORDER.

A series of conformities, which have a common centre, constitutes order. There are conformities in the members of an animal ; but order exists only in the body. Conformity refers to the detail, and order to the combination. Order extends our pleasure, by collecting a great number of conformities, and it fixes them, by giving them a determination toward one centre. It discovers to us at once, in a single object, a succession of particular conformities, and the leading conformity to which they all refer. Thus, order gives us pleasure, as beings endowed with a reason which embraces all
Nature ;

Nature ; and it pleases us still more, perhaps, as being weak and limited creatures, capable of taking in only a single point at once.

It gives us pleasure, for example, to view the relations between the proboscis of a bee, and the nectareous juices of flowers ; between those of her thighs, hollowed into spoons, and bristled with hairs, to the fine powder of the stamina which she there collects ; between those of her four wings, to the booty with which she is loaded, (a resource by Nature denied to flies which travel without a burthen, and which, for this reason, are furnished with two only * ;) finally, the use of a long sting, which she has received for the defence of her property, and all the conformities of the organs of this small insect, which are more ingenious, and in much greater number, than those of the largest animals.

But the interest grows upon us, when we see her covered all over with a yellow powder, her thighs pendent, and half oppressed with her burden, directing her flight through the air, across plains, rivers, and shady groves, under points of the

* The ichneumon, or aquatic dragon-fly, is, in like manner provided with four wings, because she too was intended to fly under a load. I have seen her catch butterflies in the air.

wind,

wind, with which she is well acquainted, and alighting, with a humming sound, on the cavernous trunk of some aged oak. Here again we perceive a successive order, on seeing a great multitude of little individuals, similar to her, coming out, and going in, according as the business of the hive may require. That one, whose particular conformities we have been admiring, is only a single member of a numerous Republic; and this Republic itself is but a small Colony, of the immense Nation of bees, spread over the whole Earth, from the Line up to the shores of the frozen Ocean.

This Nation, again, is subdivided into different species, conformably to the various species of flowers; for there are some which, being destined to live on flowers which have no depth, such as the radiated, are armed with five hooks, to prevent their sliding on the petals. Others, on the contrary, such as the bees of America, have no stings, because they construct their hives in the trunks of prickly trees, which are very common in that part of the world: such trees, accordingly, are their protection. There are many other conformities, among the other species of bees, with which we are totally unacquainted. Nevertheless, this vast Nation, so varied in its Colonies, and whose possessions are so extensive, is but one little family of the

the class of flies, of which we know, in our own Climate alone, near six thousand species, most of them as distinct from each other, as to forms and instincts, as bees themselves are from other flies.

If we were to compare the relations of this volatile class, so numerous in itself, with all the parts of the vegetable and animal kingdoms, we should find an innumerable multitude of different orders of conformity ; and were we to add to them, those which are presented to us in the legions of butterflies, scarabs, locusts, and other insects which likewise fly, we should multiply them to infinity. All this, still, would be but a small matter, compared to the various industry of the other insects which crawl, which leap, which swim, which climb, which walk, which are motionless ; the number of these is incomparably greater than that of the first : and the history of these last, added to that of the others, would, after all, be the history of only one puny race of this great Republic of the World, replenished as it is with innumerable shoals of fishes, and endless legions of quadrupeds, amphibious animals, and birds.

All their classes, with their divisions, and subdivisions, the minutest individual of which presents a very extensive sphere of conformities, are themselves only particular conformities ; only rays and
points

points in the general sphere, of which Man alone occupies the centre, and apprehends the immensity.

From a sense of the general order, two other sentiments obviously result ; the one which throws us imperceptibly into the bosom of the DEITY, and the other, which recalls us to the perception of our wants ; the one which exhibits to us, as the original cause, a Being infinitely intelligent, without us, and the other, as the ultimate end, a very limited being, in our own person. These two sentiments characterize the two powers of which Man is constituted, the spiritual and the corporeal. This is not the place to unfold these : it is sufficient for my purpose to remark, that these two natural sentiments are the general sources of the pleasure which we derive from the order of Nature. Animals are affected only by the second, and that in a very limited degree.

A bee has a sentiment of the order of her hive ; but she knows nothing beyond that. She is totally ignorant of the order which regulates the ants in their nest, though she may have frequently seen them prosecuting their labours. To no purpose would she resort, in the event of her hive's being destroyed, to seek refuge, as a republican, in the midst of their Republic. To no purpose,

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in the hour of distress, would she attempt to avail herself of the qualities which she has in common with them, and which make communities to flourish, temperance, a disposition to industry, the love of Country, and, above all, that of equality, united to superior talents : she would meet, from them, with no hospitality, no consideration, no compassion. Nay, she would not find an asylum even among other bees of a different species : for every species has it's proper sphere assigned to it, and this by an effect of the wisdom of Nature ; for if it were otherwise, the best organized species, or the strongest, would expel the others from their domains. Hence it follows, that the society of animals could not subsist independent of the passions, nor human society independent of virtue. Man alone, of all animals, possesses the sentiment of universal order, which is that of the DEITY himself ; and by carrying over the whole Earth, the virtues which are the fruits of it, whatever may be the differences which prejudice interposes between man and man, it is sure of alluring all hearts to itself. It was by this sentiment of universal order which governed your life, that you have become the men of all Nations, and that you interest us still, even when you are no longer with us, *Aristides*, *Socrates*, *Marcus-Aurelius*, divine *Fenelon*, and you, likewise, unfortunate *John-James* !

HAR-

HARMONY.

Nature opposes beings to each other, in order to produce between them agreeable conformities. This Law has been acknowledged from the highest Antiquity. It is to be found in many passages of the Holy Scriptures. I produce one from the Book of Ecclesiasticus *: *Omnia duplicia, unum contra unum, & non fecit quidquam deesse.* “All things are double, one against another; and He hath made nothing unperfect: one thing establisheth the good of another.”

I consider this great truth as the key of all Philosophy. It has likewise been fruitful in discovery, as well as that other; *Nothing has been created in vain.* It has been the source of taste in the arts and in eloquence. Out of contraries arise the pleasures of vision, of hearing, of touching, of tasting, and all the attractions of beauty, of whatever kind it may be. But from contraries, likewise, arise ugliness, discord, and all the sensations which fill us with disgust. In this there is something very wonderful, that Nature should employ the same causes to produce effects so dif-

* Ecclesiasticus, chap. xlii. ver. 24, 25.

ferent. When she opposes contraries to each other, painful affections are excited in us; but when she blends them, we are agreeably affected. From the opposition of contraries springs discord, and from their union results harmony.

Let us endeavour to find in Nature some proofs of this great Law. Cold is the opposite of heat, light of darkness, earth of water; and the harmony of these contrary elements produces effects the most delightful: but if cold succeeds rapidly to heat, or heat to cold, most vegetables and animals, exposed to such sudden revolutions, are in danger of perishing. The light of the Sun is agreeable; but if a black cloud suddenly intercepts, or bears upon, the lustre of his rays, or if a gleaming flame, such as that of lightning, bursts from the bosom of a very dark night, the eye, in both these cases, undergoes a painful sensation. The horror of a thunder-storm is greatly increased, if the tremendous explosions are interrupted by intervals of profound silence; and it is heightened inexpressibly, if the oppositions, of those celestial fires and obscurities, of that tumult and tranquillity, make themselves felt in the gloom and silence of night.

Nature opposes, in like manner, at sea, the white foam of the billows to the black colour of the
the

the rocks, in order to announce to the mariners from afar the danger of shallows. She frequently presents to them forms analagous to destruction, such as those of ferocious animals, of edifices in ruins, or of the keels of ships turned upward. She even extracts from these awful forms hollow noises resembling groans, and broken off by long intervals of silence. The Ancients believed that they saw in the rock of Scylla, a female of a hideous form, whose girdle was surrounded by a pack of dogs, which barked incessantly. Mariners have given to the rocks of the Bahama channel, so noted for shipwrecks, the name of the *Martyrs*, because they present, through the spray of the billows which break on them, the horrid spectacle of men impaled, and exposed on wheels. You would even imagine, that you heard sighs and sobbings issuing from these dismal shallows.

Nature employs, in like manner, those clashing oppositions, and those ominous signs, to express the characters of savage and dangerous animals of all kinds. The lion strolling, by night, through the solitudes of Africa, announces his approach from a great distance, by roarings, which have a striking resemblance to the rolling of thunder. The vivid and instantaneous flashes of fire which dart from his eyes in the dark, exhibit, besides, the appearance of that formidable meteor, lightning.

During the Winter season, the howlings of the wolves in the forests of the North resemble the whistling of the winds as they agitate the trees; the cries of birds of prey are shrill, piercing, and now and then interrupted by hollow notes. Nay, there are some which emit the sounds of a human being in pain. Such is the lom, a species of sea-fowl, which feeds on the shelvy coast of Lapland *, on the dead bodies of animals which are there put ashore : he cries like a man a-drowning.

Noxious insects exhibit the same oppositions, and the same signals of destruction. The gnat, thirsting after human blood, announces himself to the eye, by the white points with which his brown-coloured body is studded, and to the ear, by his shrill notes, which disturb the tranquillity of the grove. The carnivorous wasp is speckled, like the tiger, with black stripes on a yellow ground. You frequently find in our gardens, about the roots of trees which are decaying, a species of bug, of a longish form, which bears on it's red body marbled with black, the mask of a death's head. Finally, the insects which attack our persons more immediately, however small they may be, distinguish themselves by glaring oppositions of colour to the field on which they settle.

* See *John Schæffer's History of Lapland.*

But

But when two contraries come to be blended, of whatever kind, the combination produces pleasure, beauty, and harmony. I call the instant, and the point, of their union: *harmonic expression*. This is the only principle which I have been able to perceive in Nature; for the elements themselves, as we have seen, are not simple: they always present accords formed of two contraries to analyses multiplied without end. Thus, to resume some of the instances already adduced, the gentlest temperatures, and the most favourable, in general, to every species of vegetation, are those of the seasons in which cold is blended with heat, as in the Spring and Autumn. They are then productive of two saps in trees, which the strongest heats of Summer do not effect. The most agreeable production of light and darkness are perceptible at those seasons when they melt into each other, and form what Painters call the *clear-obscure* and *half-lights*. For this reason it is, that the most interesting hours of the day are those of morning and evening: those hours, when, in the beautiful imagery of *La Fontaine*, in his charming fable of *Pyramus* and *Thisbe*, the shade and the light strive for the mastery in the azure fields. The most lovely prospects are those in which land and water are lost in each other; this suggested that observation of honest *Plutarch*; namely, that the pleasanter land-journies are those which we make

along the shore of the sea; and the most delightful voyages those which are a coasting along the land. You will observe these same harmonies result from favours and sounds the most opposite, in the pleasures of the palate, and of the ear.

We shall proceed to examine the uniformity of this Law, in the very principles by which Nature gives us the first sensations of her works, which are colours, forms, and motions.

Of Colours.

I shall be carefully on my guard not to give a definition of colours, and still more, not to attempt an explanation of their origin. Colours are, as Naturalists tell us, refractions of the light on bodies, as is demonstrated by the prism, which, by breaking a ray of the Sun, decompounds it into seven coloured rays, which display themselves in the following order; red, orange, yellow, green, blue, indigo, and violet. These are, as they will have it, the seven primitive colours. But, as has been already observed, We do not know what is primitive in Nature. I might object to them, that if the colours of objects are produced only from the refraction of the light of the Sun, they ought to disappear at the light of a taper, for the
light

light of a taper is not decomposed by the prism: but I shall confine myself to a few reflections respecting the number, and the order of those seven pretended primitive colours.

First, it is evident that four of these are compounded; for orange is made up of yellow and red; green, of yellow and blue; violet, of blue and red; and indigo is nothing more than a tint of blue furcharged with black. This reduces the solar colours to three primordial; namely, yellow, red, and blue; to which if we add white, which is the colour of light, and black, which is the privation of it, we shall have five simple colours with which may be compounded all imaginable shades of colour.

I must here observe, that our philosophical machinery deceives us with its affectation of superior intelligence, not only because it ascribes false elements to Nature, as when the prism displays compound for primitive colours, but by stripping her of such as are true; for how many white and black bodies must be reckoned colourless, considering that this same prism does not exhibit their tints in the decomposition of the solar ray!

This instrument leads us farther into an error respecting the natural order of these very colours,
by

by making the red ray the first in the series, and the violet ray the last. The order of colours in the prism, therefore, is only a triangular decomposition of a ray of cylindrical light, the two extremes of which, red and violet, participate the one of the other, without terminating it; so that the principle of colours, which is the white ray and its progressive decomposition, is no longer manifested in it. I am very much disposed to believe, that it is even possible to cut a crystal with such a number of angles, as would give to the refractions of the solar ray an order entirely different, and would multiply the pretended primitive colours far beyond the number of seven. The authority of such a polyedron would become altogether as respectable as that of the prism, if the Algebraists were to apply to it a few calculations, somewhat obscure, with a seasoning of the ratiocination of the corpuscular philosophy, as they have done with regard to the effects of the triangular instrument.

We shall employ a method, not quite so learned, to convey an idea of the generation of colours, and of the decomposition of the solar ray. Instead of examining them in a prism of glass, we shall consider them in the Heavens, and there we shall behold the five primordial colours unfold themselves in the order which we have indicated.

In

In a fine Summer's night, when the sky is serene, and loaded only with some light vapours, sufficient to stop, and to refract, the rays of the Sun, as they traverse the extremities of our Atmosphere, walk out into an open plain, where the first fires of *Aurora* may be perceptible. You will first observe the Horizon whiten at the spot where she is to make her appearance; and this kind of radiance, from it's colour, has procured for it, in the French language, the name of *aube* (the dawn) from the Latin word *alba*, which signifies white. This whiteness insensibly ascends in the Heavens, and assumes a tint of yellow, some degrees above the Horizon; the yellow, as it rises some degrees higher, passes into orange; and this shade of orange rises upward into the lively vermilion, which extends as far as the Zenith. From that point you will perceive in the Heavens, behind you, the violet succeeding the vermilion, then the azure, after it the deep blue or indigo colour, and, last of all, the black quite to the westward.

Though this display of colours presents an infinite multitude of intermediate shades, which succeed each other with considerable rapidity, nevertheless, there is a moment, and, if my recollection of it be accurate, it is the moment when the Sun is just going to exhibit his disk, that the dazzling white is visible in the Horizon, the pure yellow,

yellow, at an elevation of forty-five degrees ; the fire colour, in the Zenith ; the pure blue, forty-five degrees under it, toward the West ; and, in the very West, the dark veil of night still lingering on the Horizon. At least, I think, I have remarked this progression between the Tropics, where there is scarcely any horizontal refraction to make the light prematurely incroach on the darkness, as in our Climates.

J. J. Rousseau observed to me one day, that though the field of those celestial colours be blue, the yellow tints which melt away into it, do not produce by that mixture the colour of green, as is the case in our material colours, when these two shades are blended. But I replied, that I had frequently perceived green in the Heavens, not only between the Tropics, but over the Horizon of Paris. That colour, in truth, is hardly ever seen with us, but in some fine Summer evenings. I have likewise seen, in the clouds of the Tropics, all the colours perceptible on the earth, particularly at sea, and in stormy weather. You may then see some of them copper-coloured, some of the colour of the smoke of a tobacco-pipe, some brown, reddish, black, gray, chestnut, livid, the colour of a heated oven's mouth. As to those which appear there in fine weather, some are so lively and brilliant, that no palace can exhibit any thing

thing to vie with them, were it enriched with all the gems of the Great Mogul.

Sometimes the trade-winds, from the North-east, or South-east, which constantly blow there, card the clouds through each other, like so many tufts of silk ; then sweep them away to the West, crossing and re-crossing them over one another, like the osiers interwoven in a transparent basket. They throw over the sides of this chequered work, the clouds which are not employed in the texture, and which are in no small number, roll them up into enormous masses, as white as snow, draw them out along their extremities in form of a crupper, and pile them upon each other, like the Cordeliers of Peru, moulding them into the shape of mountains, of caverns, and of rocks ; afterwards, as evening approaches, they grow somewhat calm, as if afraid of deranging their own workmanship. When the Sun comes to set behind this magnificent netting, you see a multitude of luminous rays transmitted through each particular interstice, which produce such an effect, that the two sides of the lozenge illuminated by them, have the appearance of being begirt with a fillet of gold, and the other two, which are in the shade, seem tinged with a superb ruddy orange. Four or five divergent streams of light, emanated from the setting Sun up to the Zenith, clothe with fringes

fringes of gold, the undeterminate summits of this celestial barrier, and proceed to strike with the reflexes of their fires the pyramids of the collateral aërial mountains, which then appear to consist of silver and vermillion. At this moment of the evening are perceptible, amidst their redoubled ridges, a multitude of valleys extending into infinity, and distinguishing themselves at their opening by some shade of flesh, or of rose-colour.

Those celestial valleys present, in their different contours, inimitable tints of white, melting away into white, or shades lengthening themselves out, without mixing over other shades. You see, here and there, issuing from the cavernous sides of those mountains, tides of light precipitating themselves in ingots of gold and silver, over rocks of coral. Here it is a gloomy rock, pierced through and through, disclosing, beyond the aperture, the pure azure of the firmament ; there it is an extensive strand, covered with sands of gold, stretching over the rich ground of Heaven; poppy-coloured, scarlet, and green as the emerald.

The reverberation of those western colours diffuses itself over the Sea, whose azure billows it glazes with saffron and purple. The mariners, leaning over the gunwale of the ship, admire in silence those aërial landscapes. Sometimes this
sublime

sublime spectacle presents itself to them at the hour of prayer, and seems to invite them to lift up their hearts with their voices to the Heavens. It changes it's appearance every instant : what was just now luminous, becomes in a moment coloured simply ; and what is now coloured, will, by and by, be in the shade. The forms are as variable as the shades ; they are, by turns, islands, hamlets, hills clothed with the palm-tree ; vast bridges stretching over rivers, fields of gold, of amethysts, of rubies, or rather, nothing of all this ; they are celestial colours and forms which no pencil can pretend to imitate, and which no language can describe.

It is very remarkable, that all travellers who have, at various seasons, ascended to the summits of the highest mountains on the Globe, between the Tropics, and beyond them, in the heart of the Continent, or in Islands, never could perceive, in the clouds below them, any thing but a gray and lead-coloured surface, without any variation whatever as to colour, being always similar to that of a lake. The Sun, notwithstanding, illuminated those clouds with his whole light ; and his rays might there combine, without obstruction, all the laws of refraction to which our systems of Physics have subjected them. From this observation it follows,

follows, and I shall repeat it in another place, because of it's importance, that there is not a single shade of colour employed in vain, through the whole extent of the Universe; that those celestial decorations were made for the level of the Earth, and that their magnificent point of view is taken from the habitation of Man.

These admirable concerts of lights and forms, which manifest themselves only in the lower region of the clouds, the least illuminated by the Sun, are produced by laws with which I am totally unacquainted. But let their variety be what it may, the whole are reducible to five colours: yellow appears to be a generation from white; red a deeper shade of yellow; blue, a tint of red greatly strengthened; and black, the extreme tint of blue. It is impossible to entertain a doubt respecting this progression, if you observe, in the morning, as I have mentioned, the expansion of light in the Heavens. You there see those five colours, with their intermediate shades, generating each other nearly in this order: white, sulphur yellow, lemon yellow, yolk of egg yellow, orange, Aurora colour, poppy red, full red, carmine red, purple, violet, azure, indigo, and black. Each of those colours seems to be only a strong tint of that which precedes it, and a faint tint of that

that which follows ; thus the whole together appear to be only modulations of a progression, of which white is the first term, and black the last.

In this order, whereof the two extremes, white and black, that is, light and darkness, produce, in harmonizing, so many different colours, you will remark, that the red colour holds the middle place, and that it is the most beautiful of the whole, in the judgment of all Nations. The Russians, when they would describe a beautiful girl, say she is red. They call her *craftna dévitfa*: red and beautiful being with them synonymous terms. In Mexico and Peru, red was held in very high estimation. The most magnificent present which the Emperor *Montezeuma* could devise for *Cortez*, was a necklace of lobsters, which naturally had that rich colour *. The only demand made upon the Spaniards by the King of Sumatra, on their first landing in his country, and presenting him with many samples of the commerce and industry of Europe, was some corals, and scarlet-coloured stuffs † ; and he promised to give them, in return, all the spices, and other merchandize, of India, for which they might have occasion.

* See Herrera.

† See General History of Voyages by the Abbé *Prevost*.

There is no such thing as carrying on trade, to any advantage, with the Negros, the Tartars, the Americans, and the East-Indians, but through the medium of red cloths. The testimonies of travellers are unanimous respecting the preference universally given to this colour. Of this I could produce proofs innumerable, were I not afraid of being tedious. I have indicated the universality of this taste, merely in the view of demonstrating the fallhood of the philosophic axiom which asserts, that tastes are arbitrary, or, which amounts to the same thing, that there are in Nature no laws for beauty, and that our tastes are the effects of prejudice. The direct contrary of this is the truth; it is prejudice that corrupts our natural tastes, which would otherwise be the same over the whole Earth. From a prejudice of this kind, the Turks prefer green to every other colour, because, according to the tradition of their Theologians, this was the favourite colour of *Mahomet*, and his descendants alone, of all the Turks, have the privilege of wearing the green turban.

But from a similar, though opposite prejudice, the Persians, their neighbours, despise green, because they reject the traditions of those Turkish Theologians, and, accordingly, do not acknowledge that consanguinity of their Prophet, being followers of *Ali*.

From

From another chimera, yellow appears to the Chinese the most distinguished of all colours, because it is that of their emblematical dragon. Yellow is, in China, the imperial colour, as green is in Turkey. The Chinese, nevertheless, if we may depend on the authority of *Isbrants-Ides* represent their Gods and Heroes, on the stage, with their faces stained a blood colour *. All these Nations, the political colour excepted, consider red as the most beautiful, which is sufficient to establish, with respect to it, an unanimity of preference.

But, without dwelling longer on the variable testimony of Man, we have only to appeal to that of Nature. It is with red that Nature heightens the most brilliant parts of the most beautiful flowers. She has given a complete clothing of it to the rose, the Queen of the Garden: she has bestowed this tint on the blood, which is the principle of life in animals: she invests most of the feathered race, in India, with a plumage of this colour, especially in the season of love. There are very few birds, on which she does not then bestow some shades, at least, of this rich hue. Some have their heads covered with it, such as those which are called Cardinals; others have a breast-plate of it, a necklace, a capuchin, a shoulder-knot. There

* Journey from Moscow to China, page 141.

are some which preserve entirely the gray, or brown ground of their plumage, but glazed over with red, as if they had been rolled in carmine. Others are besprinkled with red, as if you had blown a scarlet powder over them. Together with this, some have a mixture of small white points, which produces a charming effect. A little bird of India, called *Bengali*, is painted in this manner.

But nothing can be more lovely than a turtle-dove of Africa, who bears on her pearl-gray plumage, precisely over the place of the heart, a bloody spot consisting of different kinds of red blended, perfectly resembling a wound : it seems as if this bird, dedicated to Love, was destined to wear her master's livery, and had served as a mark to his arrows. What is still more wonderful, these rich coralline tints disappear in most of those birds as soon as the season of love is over, as if they were robes of ceremony, lent them by the benevolence of Nature, only during the celebration of their nuptials.

The red colour, situated in the midst of the five primordial colours, is the harmonic expression of them, by way of excellence ; and the result, as has been said, of the union of two contraries, light and darkness. There are, besides,
tints

tints extremely agreeable, compounded of the oppositions of extremes. For example, of the second and fourth colour, that is, of yellow and blue, is formed green, which constitutes a very beautiful harmony, and which ought, perhaps, to possess the second rank in beauty, among colours, as it possesses the second in their generation. Nay, green appears, in the eyes of many persons, if not the most beautiful tint, at least the most lovely, because it is less dazzling than red, and more congenial to the eye *.

I shall

* It is harmony which renders every thing perceptible, just as monotony makes every thing to disappear. Not only are colours the harmonic consonances of light: but there is no one coloured body whose tint Nature does not heighten by the contrast of the two extreme generative colours, which are white and black. Every body detaches itself by means of light and shade, the first of which is a-kin to the white, and the second to the black. Every body, accordingly, bears upon it a complete harmony.

This is not the effect of chance. Were we enlightened, for example, by a luminous air, we should not perceive the form of bodies; for their outlines, their profiles, and their cavities, would be overspread with an uniform light, which would cause their prominent and retreating parts to disappear. With a providence, therefore, completely adapted to the weakness of our vision, the AUTHOR of Nature has made the light to issue from a single point of Heaven: and with an intelligence that equally challenges our admiration, He has given a motion of progression to the Sun, who is the source of that light, in order to form, with the shades, harmonies varying every instant. He has like-

I shall insist no longer on the other harmonic shades which may be deduced, in conformity to the laws of their generation, from colours the most opposite; and of which might be formed accords and concerts, such as Father *Casfel* produced from his celebrated Harpsichord. I must, however, remark, that colours may have a powerful influence on the passions; and that they, as well as their harmonies, may be referred to the moral af-

fections. I shall modify that light, on terrestrial objects, in such a manner, as to illuminate both immediately and mediately, by refraction and by reflection, and to extend its tints, and its harmonies, with those of shade, in a way that no words can express.

J. J. Rousseau one day made this observation: "Painters can give the appearance of a body in relief, to a smooth surface; I should be very glad to see them give the appearance of a smooth surface to a raised body." I made no reply at the moment; but having since reflected on the solution of this problem in optics, I by no means consider the thing as impossible. The whole that is necessary, according to my idea, is to destroy one of the harmonic extremes which render bodies prominent. For instance, if the object aimed at were to flatten a bas-relief, it would be necessary to paint the cavities white, or the prominent parts black. Accordingly, as they employ the harmony of the clare-obscur, to give the appearance of a solid body to a plane surface, they might employ the monotony of one single tint, to make what is actually raised and solid to disappear, and become to the eye a plane surface. In the first case, painting renders that visible which is not tangible; in the second, we should have a body that might be touched, without being visible. This last deception would be fully as surprizing as the other.

fections.

fections. For example, making red the point of departure, which is the harmonic colour supereminently, and proceeding toward white in an ascending progression, the nearer you approach to this first term, the more lively and gay are the colours. You will have in succession the poppy, the orange, the yellow, the lemon, the sulphur, the white. On the contrary, the farther you proceed from red toward black, the sadder and more lugubrious are the colours; for this is the progression; purple, violet, blue, indigo, and black.

In the harmonies which may be formed, on both sides, by the union of opposite colours, the more that the tints of the ascending progression predominate, the more lively will be the harmonies produced; and the contrary will take place, in proportion as the colours of the descending harmony shall prevail. From this harmonic effect it is, that green, being compounded of yellow and blue, is so much more gay, as the yellow has the ascendant, and sad in proportion as the blue predominates.

Farther, from this harmonic influence it is, that white transfuses most gaiety into all other tints, because it is light itself. Nay, it produces, from opposition, a most delightful effect in the harmonies, which I call melancholy; for, blended

with violet, it gives the delicious hue of the lilach flower; mixed with blue, it makes azure; and with black, produces pearl-gray; but melted away into red, it exhibits the rose colour, that enchanting tint, which is the flower of life. On the other hand, according to the predominance of black in colours which are gay, the effect produced is more mournful than would have resulted from unmixed black. This becomes perceptible on blending it with yellow, orange, and red, which are thereby rendered dull and gloomy colours. Red gives life to every tint into which it is infused, as white communicates gaiety, and black sadness.

If you would wish to produce effects entirely opposite to most of those which I have been just indicating, you have only to place the extreme colours closely by each other, without mingling them. Black, opposed to white, produces the most mournful, and the harshest effect. Their opposition is a badge of mourning among most Nations, as it is the signal of impending destruction in the tempestuous appearances of the Heavens, and in the commotions of the Ocean. The yellow too, opposed to black, is the characteristic of many dangerous animals, as the wasp, the tyger, and several others....I do not pretend to insinuate, that the women have not the skill of employing

ploying to advantage, in their drefs, thofe oppofite colours ; but they are called in as an embellishment only on account of the contrafts which they form with the colour of their complexion ; and as the red predominates there, it follows that the oppofite colours are advantageous to them, for harmonic expreffion is never ftronger, than when found between the two extremes which produce it. We fhall offer a few thoughts hereafter on this part of harmony, when we come to fpeak of contrafts, and of the human figure.

It would be ridiculous to affect ignorance of the objections which may be ftarted againft the univerfality of thefe principles. We have reprefented white as a gay, and black as a fad colour. Nevertheless, certain Negro Nations reprefent the Devil as white : the inhabitants of the Peninfula of India, in token of mourning, rub their forehead and temples with the powder of fandallow, the colour of which is a yellowifh white. The Navigator *La Barbinois*, who, in his voyage round the world, has as well defcribed the manners of China, as thofe of our fea-officers, and of feveral European Colonies, fays, that white is the colour of mourning among the Chinefe. From thefe instances it might be concluded, that the feeling of colour muft be arbitrary, as it is not the fame in all Nations.

I venture

I venture to offer the following reply to these objections. It has already been proved by evidence, that the Nations of Africa and Asia, however black they may be, prefer white women to those of every other tint. If there be any Negro Nations who paint the Devil white, this may be easily accounted for, from the strong feeling which they have of the tyranny which the whites exercise over them. White, accordingly, having become with them a political colour, ceases to be a natural one. Besides, the white in which they paint their Devil is not a white, beautifully harmonious, like that of the human figure: but a dead white, a chalk white, such as that with which our painters illuminate the figures of phantoms and ghosts in their magical and infernal scenes.

If this dazzling colour is the expression of mourning among the Indians and Chinese, the reason is, it contrasts harshly with the black skin of those Nations. The Indians are black. The skin of the southern Chinese is much sun-burnt. They derive their religion and their leading customs from India, the cradle of the Human Race, the inhabitants of which are black. Their outward garments are of a gloomy colour; a great part of their dress consists of black satin; the covering for their under extremities is black boots; the ornamental furniture of their houses consists,
in

in a great measure, of that beautiful black varnished ware, which we import from their country. White must, therefore, produce a harsh dissonance with their furniture, their dresses, and, above all, with the dusky colour of their skin.

If those Nations were to wear a black habit, in mourning, as we do, be their colour ever so deep, it would not form a clashing opposition in their dresses. The expression of grief, accordingly, is precisely the same with them as with us. For if we, in a season of mourning, oppose the black colour of our clothes to the white colour of our skin, in order thence to produce a funereal dissonance, the southern Nations oppose, on the contrary, the white colour of their garments to the dusky colour of their skin, in order to produce the same effect.

This variety of taste admirably confirms the universality of the principles which we have laid down respecting the causes of harmony and dissonance. It farther demonstrates, that the agreeableness, or disagreeableness of a colour, resides not in one single shade, but in the harmony, or in the clashing contrast, of two opposite colours.

We might find proofs of those laws multiplied without end, in Nature, to which Man ought ever
to

to have recourse in all his doubts. She opposes harshly, in hot countries as in cold, the colours of dangerous and destructive animals. Venemous reptiles are universally painted in gloomy colours. Birds of prey are universally of an earthy hue opposed to yellow, and white specks on a dark ground, or dark spots on a light ground. Nature has given a yellow robe, striped with dusky brown, and sparkling eyes, to the tyger lying in ambush under the shade of the forests of the South : and she has tinged with black the snout and paws, and with blood-colour the throat and eyes, of the white bear, and thereby renders him apparent, notwithstanding the whiteness of his fur, amidst the snows of the North.

Of Forms.

Let us now proceed to the generation of forms. If I am not mistaken, the principles of these, like those of colours, are reducible to five, namely, the line, the triangle, the circle, the ellipse, and the parabola.

The line generates all forms, as the ray of light does all colours. It goes on progressively, like the other, in it's generations, step by step, producing

ducing first, by three fractions, the triangle, which of all figures, contains the smallest of surfaces under the greatest of circuits. The triangle afterward, composed itself of three triangles at the centre, produces the square, which consists of four triangles from the central point; the pentagon, which consists of five; the hexagon, which consists of six; and so of the rest of the polygons, up to the circle, which is composed of a multitude of triangles, whose summits are at it's centre, and the bases at it's circumference: and which, contrary to the triangle, contains the greatest of surfaces under the smallest of peripheries. The form which has, hitherto, always been going on progressively, commencing with the line, relatively to a centre, up to the circle, afterwards deviates from it; and produces the ellipse, then the parabola, and finally all the other widened curves, the equations of which may all be referred to this last.

So that under this aspect, the indefinite line has no common centre: the triangle has three points in it's bounding lines, which have a common centre; the square has four; the pentagon five; the hexagon six: and the circle has all the points of it's circumference regulated conformably to one common and only centre. The ellipse begins to deviate from this regulation, and has two centres; and the parabola, as well as the other
curves,

curves, which are analogous to it, have centres innumerable contained in their several axes, from which they remove farther and farther, forming something like funnels.

On the supposition of this ascending generation of forms, from the line, through the triangle, up to the circle; and their descending generation, from the circle, through the ellipse, to the parabola, I deduce, from these five elementary forms, all the forms of Nature; as, with the five primordial colours I compose all the possible shades of colour.

The line presents the slenderest form, the circle presents the fullest, and the parabola the most obliquely fluted. In this progression it may be remarked, that the circle, which occupies the middle between these two extremes, is the most beautiful of all the elementary forms, as red is the most beautiful of all the primordial colours. I presume not to say, with certain ancient Philosophers, that this form must be the most beautiful, because it is the figure of the Stars, which, however, would be no such contemptible reason; but, to employ only the testimony of our senses, it is the most grateful to both the eye and the touch; it is, likewise, the most susceptible of motion; finally, what is no mean authority in the case of natural truths, it is considered as the most conformable

formable to the taste of all Nations, who employ it in their ornaments, and in their architecture; and it is particularly conformable to the taste of children, who give it the preference to every other, in the instruments of their amusement.

It is very remarkable, that these five elementary forms have the same analogies to each other which the five primordial colours have among themselves; so that if you proceed to their ascending generation, from the sphere toward the line, you will have forms angular, lively, and gay, which shall terminate in the straight line, and of which Nature composes so many radiations and expansions of figure, in the Heavens and on the Earth, so agreeable to behold. If, on the contrary, you descend from the sphere to the excavations of the parabola, you will be presented with a gradation of cavernous forms, which are so frightful in abysses and precipices.

Farther, if you join the elementary forms to the primordial colours, term for term, you will observe their principal character mutually strengthen each other, at least in the two extremes, and in the harmonic expression of the centre: for the two first terms will give the white ray, which is the ray of light itself; the circular form, united to the red colour, will produce a figure analogous

to

to the rose, composed of spherical portions, with carmine tints, and, from the effect of this double harmony, deemed, in the judgment of all Nations, the most beautiful of flowers. Finally, black, added to the vacuity of the parabola, increases the gloom of retreating and cavernous forms.

With these five elementary forms may be composed figures as agreeable as the shades which are produced from the harmonies of the five primordial colours. So that the more there shall enter, into those mixed figures, of the two ascending terms of the progression, the more light and gay such figures will be ; and the more that the two descending terms shall predominate, the more heavy and dull will be the forms. Thus, the form will be so much the more elegant, as the first term, which is the straight line, shall have the predominance. For example, the column gives us pleasure, because it is a long cylinder, which has the circle for it's basis, and two straight lines, or a quadrilateral figure of considerable length, for it's elevation. But the palm-tree, of which it is an imitation, pleases still more, because the stellated and radiating forms of it's palms, likewise taken from the straight line, constitute a very agreeable opposition with the roundness of it's stem ; and if, to this, you unite the harmonic form by way of excellence, namely, the circular,

you

you will add inexpressibly to the grace of this beautiful tree. This, likewise, Nature, who knows much more of the matter than we, has taken care to do, by suspending, at the basis of it's divergent boughs, sometimes the oval date, and sometimes the rounded cocoa-nut.

In general, as often as you employ the circular form, you will greatly enhance the agreeableness of it, by uniting it with the two contraries of which it is composed ; for, you will then have a complete elementary progression. The circular form alone, presents but one expression, the most beautiful of all, in truth ; but united to it's two extremes, it forms, if I may so express myself, an entire thought. It is from the effect which thence results, that the vulgar consider the form of the heart to be so beautiful, as to compare to it every other beautiful and interesting object. That is beautiful as a heart, say they *. This heart-form consists, at it's basis, of a projecting angle, and above, of a retreating angle ; there we have the extremes :

* Is not our Author here indulging fancy, rather than following Nature ? If this be an idea and expression of the common people, it must be the commonality of a particular country. *Heart* is, perhaps, universally used to express fondness, affection, desire ; but to represent the *form* of that organ as *beautiful*, nay, the *essence* of beauty is, surely, a violent stretch of imagination.

H. H.

and in it's collateral parts, of two spherical portions; there is the harmonic expression.

It is, farther, from these same harmonies, that long ridges of mountains, overtopped by lofty peaks of a pyramidical form, separated from each other by deep valleys, delight us by their gracefulness and majesty. If to these you add rivers meandering below, radiating poplars waving on their banks, flocks of cattle and shepherds, you will have vales similar to that of Tempe. The circular forms of the mountains, in such a landscape, are placed between their extremes, namely, the prominence of the rocks, and the cavity of the valleys. But if you separate from it the harmonic expressions, that is, the circular wavings of those mountains, together with their peaceful inhabitants, and allow the extremes only to remain, and you will then have the dreary prospect of Cape-Horn; angular, perpendicular rocks, hanging over fathomless abysses.

If to these you add oppositions of colour, as that of snow on the summits of the dusky rocks, the foam of the billows breaking on the lurid shore, a pale sun in a gloomy sky, torrents of rain in the midst of Summer, tremendous squalls of wind succeeded by sudden calms, a European vessel, on her way to spread desolation over the islands
of

of the South-Sea *, running upon a rock when it is beginning to grow dark, firing, from time to time, guns, the signal of distress, the noise of which the echos of those horrid deserts reverberate, the terrified Patagonian running in amazement to his cave ; and you will have a complete view of that land of desolation, covered over with the shades of death.

Of Movements.

It remains that I suggest a few reflections on the subject of motions. Of these we shall, in like manner, distinguish five which are fundamental : self-motion, or the rotation of a body round itself, which supposes no change of place, and which is the principle of all motion ; such is, perhaps, that of the Sun ; after that, the perpendicular, the circular, the horizontal, and the state of

* Would not the effect of this dreadful picture have been considerably strengthened, had our Author represented his European vessel as attempting to double Cape-Horn, *on her return* from spreading devastation over the South-Seas, and making shipwreck on that dreary coast, *after* the scene of blood was acted ? In this case we should have had the striking and instructive representation of the connection between Human Guilt and Divine Justice ; of the clashing collision of criminality and vengeance.

H. H.

rest. All movements whatever may be referred to these five. Nay, you will remark that Geometricians, who represent them likewise by figures, suppose the circular motion to be generated of the perpendicular and the horizontal, and, to make use of their language, produced by the diagonal of their squares.

I shall not insist on the analogies of the generation of colours and forms, to those of the generation of movements ; and which actually exist, between the white colour, the straight line, and self-motion, or rotation ; between the red colour, the spherical form, and circular motion ; between darkness, vacuity, and rest. I shall not pretend to unfold the infinite combinations which might result from the union, or opposition, of the corresponding terms of each generation, and of the filiations of these same terms. I leave to the Reader the pleasure of following up this idea, and of forming to himself, with these elements of Nature, harmonies the most enchanting, with the additional charm of novelty. I shall confine myself, at present, to a few hasty observations respecting motion.

Of all movements, the harmonic, or circular motion, is the most agreeable. Nature has diffused it over most of her works, and has rendered
even

even the vegetables, which are fastened down to the earth, susceptible of it. Our plains present frequent images of this, when the winds form, on the meadow, or on the corn-field, a series of undulations, resembling the waves of the sea; or when they gently agitate, on the sides of the lofty mountains, the towering tops of the trees, waving them about in segments of a circle. Most birds form portions of great circles as they play through the airy expanse, and seem to take pleasure in tracing, as they fly, an infinite variety of curves and spiral motions. It is remarkable that Nature has bestowed this agreeable style of flying on many of the inoffensive species of the feathered race, not otherwise to be prized for the exquisiteness of either their song or their plumage. Such, among others, is the flight of the swallow.

The case is very different with respect to the progressive movements of ferocious or noxious animals. They advance leaping, springing, and join to movements sometimes extremely slow, others violently rapid: this is observable in the motion of the cat lying in wait to catch a mouse. Those of the tiger are exactly similar, in his approaches upon his prey. The same discordancy is observable in the flight of carnivorous birds. The species of owl called the grand-duke floats through the midst of a tranquil sky, as if the wind carried

him this way and that. Tempests present, in the Heavens, the same characters of destruction. You sometimes perceive the stormy clouds moving in opposite directions, and with various degrees of velocity; now they fly with the rapidity of lightning, while others remain immovable as the rock. In the tremendous hurricanes of the West-Indies, the explosion is always preceded and followed by a dead calm.

The more that a body possesses of self-motion, or of rotation, the more agreeable it appears, especially when to this movement is united the harmonic, or circular, motion. It is for this reason, that trees whose leaves are moveable, such as the aspen and poplar, have more grace than other forest trees, when agitated by the wind. They please the eye by the balancing of their tops, and by presenting, in turns, the two surfaces of their foliage, which display two different greens. They are likewise agreeable to the ear, from their imitation of the bubbling of water. From the effect of self-motion it is, that, every moral idea out of the question, animals interest us more than vegetables, because they have the principle of motion within themselves.

I do not believe there is a single spot on the Earth in which there is not some body in motion.
Frequently

Frequently have I been in the midst of vast solitudes, by day and by night, and in seasons of perfect tranquillity, and I have always heard some noise or another. Often, in truth, it was only the sound of a bird flying, or of an insect stirring a leaf; but sound always supposes motion.

Motion is the expression of life. In this you see the reason why Nature has multiplied the causes of it in all her works. One of the great charms of a landscape is to see objects in motion; and this is the very thing which the pictures of most of our great Masters frequently fail to express. If you except such of them as represent tempests, you will find, every where else, their forests and their meadows motionless, and the water of their lakes congealed. Nevertheless, the inversion of the leaves of trees presenting a gray or white under-side; the undulations of the grass in the vallies, and on the ridges of the mountains; those which ruffle the smooth surface of the waters, and the foam which whitens the shores, recal, with inexpressible pleasure, in a burning summer-scene, the breath so gentle and so cooling of the zephyrs. To these might be added, with infinite grace, and with powerful effect, the movements peculiar to the animals which inhabit them; for example, the concentric circles which the diving-bird forms on the surface of the water; the flight
of

painted chariots with four horses, that the wheels appeared to be turning round. In the curious list which he has transmitted to us of the most celebrated pictures of antiquity, and still viewed with admiration at Rome, in his time, he particularly mentions one which represented women spinning wool, whose spindles seemed actually to whirl. Another was held in high estimation *, “in which
 “were represented two light-armed soldiers, the
 “one of whom is so heated with running in battle, that you see him sweat, and the other, who
 “is laying down his arms, appears so exhausted,
 “that you imagine you hear him panting.” I have seen, in many modern pictures, machines in motion, wrestlers and warriors in action, but in no one of them did I ever find attention paid to these effects so simple, and so expressive of the truth of Nature. Our painters consider them as petty details, beneath the notice of a man of genius. Nevertheless these petty details are traits of character.

Marcus Aurelius, who possessed fully as much genius as any modern whatever, has very judiciously observed, that, in many cases, it is on such minutenesses the attention fixes, and from the contemplation of these the mind derives the most

* *Pliny's Natural History*. Book xxxvii. chap. 10 and 11.

pleasure.

pleasure. "The sight of the shrivelling of ripe
"figs," says he, "the bushy eye-brows of a lion,
"the foaming of an enraged wild-boar, the red-
"dish scales which rise on the crust of bread
"coming out of the oven, give pleasure." This
pleasure may be accounted for in various ways :
first, from the weakness of the human mind,
which, in contemplating any object whatever,
fixes on some one principal point ; and then,
from the design of Nature, who, likewise, in all
her works, presents to us one single point of con-
formity, or of discordancy, which is, as it were,
it's centre. The mind increases it's affection, or
it's aversion, for this characteristic trait, the more
simple that it is, and, in appearance, contemptible.
This is the reason that, in eloquence, the shortest
expressions always convey the strongest passions ;
for all that is requisite, as we have hitherto seen,
in order to excite a sensation of pleasure, or of
pain, is to determine a point of harmony, or of
discord, between two contraries : now, when these
two contraries are opposites in nature, and are so,
besides, in magnitude and in weakness, their op-
position redoubles, and consequently their effect.

The effect is farther heightened, if to this is
joined, especially, the surprize of seeing striking
occasions of hope, or of fear, produced by objects
of apparently small importance ; for every phy-
fical

fical effect produces, in Man, a moral feeling. For example, I have seen many pictures, and read many descriptions, of battles, which attempted to inspire horror, by representing an infinite variety of instruments of destruction, and a multitude of dying and dead persons, wounded in every possible manner. The less did I feel myself moved, the more I perceived the machinery employed to move me: one effect destroyed the other. But I have been greatly affected by reading, in *Plutarch*, the death of *Cleopatra*.

That great Painter of calamity, represents the Queen of Egypt meditating, in the tomb of *Anthony*, on the means of eluding the triumph of *Augustus*. A peasant brings her, with permission of the guards on duty at the entrance of the tomb, a basket of figs. The moment that the clown has retired, she hastens to uncover the basket, and perceives the asp, which, by her contrivance, had been introduced among the figs, to put a period to her miserable life. This contrast, a woman being the subject, of liberty and slavery, of royal power and annihilation, of voluptuousness and death; those leaves and fruits amidst which she perceives only the head and sparkling eyes of a puny reptile, prepared to terminate interests of such "great pith and moment;" and which she
thus

thus addresses, *There you are !* all these oppositions, one after another, make you shudder.

But, in order to render the person itself of *Cleopatra* interesting, there is no occasion to represent her to yourself, as our Painters and Sculptors exhibit her, an academic figure destitute of expression ; a strapping virago, robust, and replete with health, with large eyes, turned toward Heaven, and wearing round her large and brawny arm a serpent twisted, like a bracelet. This is by no means a representation of the little, voluptuous, Queen of Egypt, who had herself carried, as I before mentioned, packed up in a bundle of goods, on the shoulders of *Apollodorus*, to keep a stolen assignation with *Julius Cesar* ; at another time walking the streets of Alexandria by night, with *Anthony*, disguised as a sempstress, rallying him, and insisting that his jests, and style of humour, smelt strongly of the soldier. Still less is it a representation of the unfortunate *Cleopatra*, reduced to the extreme of calamity, dragging up, by means of cords and chains, with the assistance of two of her women, through the window of the monument in which she had taken refuge, with her head downward, without ever letting go her hold, says *Plutarch*, that very *Anthony*, covered over with blood, who had run himself through with his own sword, and
who

who struggled with all his remaining strength to get up, and expire in her arms.

Details are by no means to be despised ; they are frequently traits of character. To return to our Painters and Sculptors ; if they withhold the expression of motion to landscapes, to wrestlers, and to chariots in the course, they bestow it on the portraits and the statues of our great Men and Philosophers. They represent them as Angels sounding the alarm to judgment, with hair flying about, with wild wandering eyes, the muscles of the face in a state of convulsion, and their garments fluttering in the wind. These, they tell us, are the expressions of genius. But persons of genius, and great Men, are not bedlamites. I have seen some of their portraits, on antiques. The medals of *Virgil*, of *Plato*, of *Scipio*, of *Epaminondas*, nay, of *Alexander*, represent them with a serene and tranquil air. It is the property of inanimate matter, of vegetables, and of mere animals, to obey all the movements of Nature ; but it is that of a great Man, in my opinion, to have his emotions under command, and it is only in so far as he exercises this empire, that he merits the name of Great.

I have made a short digression from my subject, in order to suggest a few lessons of *conformity* to
Artists,

Artists, who, I am well aware, will find it much more difficult to execute, than it is easy for me to criticize. God forbid that any thing I have said should give a moment's pain to men whose works have so frequently given me exquisite pleasure. It was simply my wish, to caution the ingenious against the academic manner which fetters them, and to stimulate them to tread in the steps of Nature, and to pursue that track as far as genius can carry them.

This would be the place to speak of Music, for sounds are movements merely: but persons of much greater ability than I dare pretend to, have treated this noble Art with consummate skill. If any foreign testimony could farther confirm me in the certainty of the principles which I have hitherto laid down, it is that of Musicians of the highest reputation, who have restricted harmonic expression to three sounds. I might, as they have done, reduce to three terms the elementary generations of colours, of forms, and of motions; but if I am not mistaken, they themselves have omitted, in their fundamental basis, the generative principle, which is *sound* properly so called, and the negative term, which is silence; especially as this last produces effects so powerful in the movements of Music.

These

These proportions might be extended to the progressions of tasting, and it might be demonstrated, that the most agreeable of them have similar generations; as we know, by experience, to be the case with regard to most fruits, whose different stages of maturity successively present five flavours, namely, the acid, the sweet, the sugary, the vinous, and the bitter. They are acid while growing, sweet as they ripen, sugary in a state of perfect maturity, vinous in their fermentation, and bitter in a state of dryness. Farther, we should find that the most agreeable of these flavours, namely, the sugary, is that which occupies the middle place in this progression, of which it is the harmonic term; that, from it's nature, it forms new harmonies, by a combination with it's extremes; for the beverages which are most grateful to the palate, consist of acid and sugar, as the refreshing liquors prepared with citron-juice; or of sugar and bitter, such as coffee. But while I am endeavouring to open new paths to Philosophy, it is no part of my intention to present new combinations to voluptuousness.

Though I have a thorough conviction of the truth of these elementary generations, and am able to support them with a multitude of proofs which I have collected, in the tastes of polished, and of savage, Nations, but which time permits me not, at present,

present, to exhibit ; it would, however, be a matter of no surprize to me, should many of my Readers dissent from what I have advanced. Our natural tastes are perverted from our infancy, by prejudices which determine our physical sensations, much more powerfully than these last give direction to our moral affections. More than one Churchman considers violet as the most beautiful of colours, because his Bishop wears it : more Bishops than one give scarlet the preference, because it is the Cardinal's colour ; and more than one Cardinal, undoubtedly, would rather be dressed in white, because this colour is appropriated to the Head of the Church. A soldier, frequently, looks upon the red as the most beautiful of all ribbons ; but his superior officer prefers the blue. Our temperaments, as well as our conditions, have an influence upon our opinions.

Gay people prefer lively colours to every other ; persons of sensibility, those which are delicate ; the melancholy assume the dusky. Though I myself consider red as the most beautiful of colours, and the sphere as the most perfect of forms ; and though I am bound more than any other man, strenuously to adhere to this order, because it is that of my system, I prefer to the full red, the carmine colour, which has a slight shade of violet ; and to the sphere, the oval, or elliptical form. It likewise
appears

appears to me, if I may venture to say so, that Nature has bestowed, by way of preference, both of these modifications on the rose, at least before it is completely expanded. Farther, I like violet flowers better than white, and still much better than such as are yellow. I prefer a branch of lilach in bloom to a pot of gilly-flower*, and a Chinese daisy, with it's disk of a smoky yellow, it's rumpled shaggy down, it's violet and grave petals, to the most flashy cluster of sun-flowers in the Luxemburg.

I am persuaded that I have these tastes in common with many other persons, and that, if we form a judgment of men from the colour of their clothes, by far the majority is rather serious than gay. I am likewise of opinion, that Nature, for to her we must ever have recourse in order to be assured that we are right, gives most of her physical beauties a tendency to melancholy. The plaintive notes of the nightingale, the deep shades of the forest, the sober lustre of the Moon, inspire

* Dr. *Johnson* tells us that *Gilly-flower* is a corruption in orthography for *July-flower*. With due respect to so great an Etymologist, this I take to be a mistake. The flowering of the plant is by no means limited to the month of July. The English term is derived from the French word *Giroflier*, (the clove-plant) ; every one knows the striking analogy between the flavour of that spice, and the smell of the Gilly-flower. H. H.

no gaiety, nevertheless they interest us, and that deeply. I feel much more emotion in contemplating the setting than the rising Sun. In general, we are pleased by gay and sprightly beauties, but we are melted and touched only by those which are melancholy.

I shall endeavour, in another place, to unfold the causes of these moral affections. They stand in connection with laws more sublime than any physical laws: while these last amuse our senses, the others speak to the heart, and calmly admonish us, that Man is ordained to a much higher destination.

It is very possible that I may be mistaken in the order of those generations, and may have transposed their terms. But all that I, from the beginning, proposed, was to open some new paths into the Study of Nature. It is sufficient for my purpose, that the effect of these generations is generally acknowledged. Men more enlightened will establish the filiations of them in a more luminous order. All that I have hitherto said on this subject, or hereafter may say, is reducible to this great Law: Every thing in Nature is formed of contraries: it is from their harmonies that the sentiment of pleasure results, and out of their oppositions issues the sentiment of pain.

This

This Law, as we shall see, extends also to morals. Every truth, the truths of fact excepted, is the result of two contrary ideas. From this it follows, that as often as we decompound a truth, by dialectics, we divide it into the two ideas of which it is constituted; and if we confine ourselves to one of it's elementary ideas, as to a detached principle, and deduce consequences from it, we shall convert it into a source of endless disputation; for the other elementary idea will abundantly supply consequences diametrically opposite to the person who is disposed to pursue them; and these consequences are themselves susceptible of contradictory decompositions, which go on without end. The Schools are admirably adapted to instruct us how to manage this process; and thither are we sent to form our judgment. There are we taught to separate the most evident truths not only into two, but, as *Hudibras* says, into four. If, for example, some one of our Logicians, observing that cold had an influence on vegetation, should think proper to maintain, that cold is the only cause of it, and that heat is even inimical to it, he would take care, no doubt, to quote the efflorescences and the vegetations of ice, the growth, the verdure, and the flowering of mosses in Winter; plants burnt up by the heat of the Sun, in Summer, and many other effects relative to his thesis. But his antagonist, availing himself, on his side, of the influences

of Spring, and of the ravages of Winter, would clearly demonstrate, that heat alone gives life to the vegetable world. But the truth is, after all, that heat and cold combined form one of the principles of vegetation, not only in temperate climates, but to the very heart of the Torrid Zone.

It may confidently be affirmed, that all the disorders, in both Physics and Morals, are neither more nor less than the clashing opposition of two contraries. If men would pay attention to this Law, there would be a speedy end put to most of their wranglings and mistakes; for it may be urged, that, every thing being composed of contraries, whoever affirms a simple proposition, is only half right, as the contrary proposition has equally an existence in nature.

There is, perhaps, in the World but one intellectual truth, pure, simple, and which does not admit of a contrary idea; it is the existence of GOD. It is very remarkable, that those who have denied it, adduce no other proofs to support their negation, but the apparent disorders of Nature, the extreme principles of which alone they contemplated: so that they have not demonstrated, that no God existed, but that He was not intelligent, or that He was not good. Their error, accordingly, proceeds from their ignorance of natural Laws. Besides,

fides, their arguments have been founded, for the most part, on the disorders of men, who exist in an order widely different from that of Nature, and who alone, of all beings endowed with perception, have been committed to their own direction.

As to the nature of GOD, I know that faith itself presents Him to us, as the harmonic principle by way of supreme excellence, not only with relation to all that surrounds Him, of which He is the Creator and Mover, but even in his essence divided into three persons. *Bosquet* has extended these harmonies of DEITY to Man, by tracing in the operations of the human Soul, some consonancy to the Trinity, of which it is the image. These lofty speculations are, I acknowledge, infinitely above my reach. Nay, I am filled with admiration to think, that the DIVINITY should have permitted beings so weak, and so transitory, as we are, to take so much as a glimpse of his omnipotence on this Earth; and that he should have veiled, under combinations of matter, the operations of his infinite Intelligence, in order to adapt it to our perception. A single act of his will was sufficient to call us into being; the slightest communication of his works is sufficient to illuminate our reason; but I have a thorough persuasion, that if the smallest ray of his divine essence were to communicate itself directly to us, in a human body, we must be annihilated.

OF CONSONANCES.

Consonances are repetitions of the same harmonies. They increase our pleasures by multiplying them, and by transferring the enjoyment of them to new scenes. They farther communicate pleasure, by rendering it perceptible to us, that the same Intelligence has presided over the different plans of Nature, as it presents to us, throughout, similar harmonies. Consonances, accordingly, confer more pleasure than simple harmonies, because they convey to us the sentiments of extension, and of Divinity, so congenial to the nature of the human Soul. Natural objects excite in us a certain degree of satisfaction, only in so far as they awaken and display an intellectual feeling.

We find frequent examples of consonances in Nature. The clouds of the Horizon frequently imitate, on the Sea, the forms of mountains, and the aspects of land, and this so exactly, as often to deceive the most experienced mariners. The waters reflect from their heaving bosom, the heavens, the hills, the forests. The echoing rocks, in their turn, repeat the murmuring of the waters. As I was walking one day, in the Pais de Caux, along the sea-side, and considering the reflexes of the shore
in

in the bosom of the water, I was not a little astonished to hear other waves emitting a dying sound behind me. I turned round, and perceived only a high and steep shore, the echos of which were repeating the noise of the waves. This double consonance appeared to me wonderfully agreeable. You would have said there was a mountain in the sea, and a sea in the mountain.

Those transpositions of harmony, from one element to another, communicate inexpressible pleasure. Nature has multiplied them, accordingly, with boundless liberality, not only in fugitive images, but by permanent forms. She has repeated, in the midst of the Seas, the forms of Continents, in those of Islands; most of which, as we have seen, have peaks, mountains, lakes, rivers, and plains, proportioned to their extent, as if they were little Worlds. On the other hand, she represents in the midst of the Land, the basins of the vast Ocean, in mediterraneans, and in great lakes, which have their shores, their rocks, their isles, their volcanos, their currents, and, sometimes, a flux and reflux peculiar to themselves, and which is occasioned by the effusions from icy mountains, at the basis of which they are commonly situated, as the currents and tides of the Ocean are, by those of the Poles.

It is singularly remarkable, that the most beautiful harmonies are those which have the most consonances. Nothing in the World, for example, is more beautiful than the Sun, and nothing in nature is so frequently repeated as his form, and his light. He is reflected in a thousand different manners by the refractions of the air, which every day exhibit him above all the horizons of the Globe, before he is actually risen, and for some time after he has set; by the parhelia which reflect his disk, sometimes twice or thrice, in the misty clouds of the North; by the rainy clouds, in which his refracted rays trace an arch shaded with a thousand various colours; and by the waters, whose reflexes exhibit him in an infinite number of places where he is not, in the bosom of meadows, amidst flowers besprinkled with dew, and in the shade of green forests. The dull and inert earth, too, reflects him in the specular particles of gravels, of micas, of crystals, and of rocks. It presents to us the form of his disk, and of his rays, in the disks and petals of the myriads of radiated flowers with which it is covered. In a word, this beautiful star has multiplied himself to infinity, with varieties of which we know nothing, in the innumerable stars of the firmament, which he discovers to us, as soon as he quits our Horizon; as if he had withdrawn himself from the consonances

nances of the earth, only to display to the delighted eye those of Heaven.

From this Law of consonance it follows, that what is best and most beautiful in Nature, is likewise most common, and the most frequently repeated. To it we must ascribe the varieties of species in each genus, which are so much the more numerous, in proportion as that genus is useful. For example, there is no family in the vegetable kingdom so necessary as that of the gramineous, on which subsist not only all the quadrupeds, but endless tribes of birds and insects; and there is no one, accordingly, whose species are so varied. We shall take notice, in the Study on Plants, of the reasons of this variety. I shall only remark, in this place, that it is in the gramineous families Man has found the great diversity of nutritious grains, from which he derives his chief subsistence; and that from reasons of consonance, not only the species, but several of the genera, nearly approach to each other, in order that they may present similar services to Man, under Latitudes entirely different. Thus, the millet of Africa, the maize of Brasil, the rice of Asia, the palm-sago of the Moluccas, the trunks of which are filled with alimentary flower, are in consonance with the corns of Europe. We shall find consonances of another kind in the same places, as if it had been the intention

tention of Nature to multiply her benefits, by varying only the form of them, without changing almost any thing of their qualities. Thus, in our gardens, what a delightful and beneficial consonancy between the orange and citron trees, the apple and the pear, the walnut and the filbert; and in our farm-yards, between the horse and the ass, the goose and the duck, the cow and the she-goat.

Farther, each genus is in consonancy with itself, from difference of sex. There are, however, between the sexes, contrasts which give the greatest energy to their loves, from the very opposition of contraries, from which, as we have seen, all harmony takes it's birth: but without the general consonancy of form which is between them, sensible beings of the same genus never would have approached each other. Without this, one sex would have for ever remained a stranger to the other. Before each of them could have observed what the other possessed that corresponded to it's necessities, the time of reflection would have absorbed that of love, and, perhaps, have extinguished all desire of it. It is consonancy which attracts, and contrast which unites them. I do not believe that there is in any one genus, an animal of one sex entirely different from one of the other, in exterior forms; and if such differences are actually

tually found, as certain Naturalists pretend, in several species of fishes and insects, I am fully persuaded, that Nature placed the habitation of the male and of the female very close to each other, and planted their nuptial couch at no great distance from their cradle.

But there is a consonancy of forms, much more intimate still than even that of the two sexes, I mean the duplicity of the organs which exists in each individual. Every animal is double. If you consider his two eyes, his two nostrils, his two ears, the number of his legs and arms disposed by pairs, you would be tempted to say, here are two animals glued the one to the other, and united under the same skin. Nay, the parts of his body which are single, as the head, the tail, and the tongue, appear to be formed of two halves, compacted together by seams. This is not the case with regard to the members properly so called: for example, one hand, one ear, one eye, cannot be divided into two similar halves; but the duplicity of form in the parts of the body, distinguishes them essentially from the members: for the part of the body is double, and the member is single: the former is always single and alone, and the latter always repeated. Thus, the head, and the tail, of an animal are parts of it's body, and the legs and ears of it are members.

This

This Law of Nature, one of the most wonderful, and one of the least observed, destroys, at one blow, all the hypotheses which introduce chance into the organization of beings; for, independently of the harmonies which it presents, it doubles at once the proofs of a Providence, which did not deem it sufficient to give one principal organ to each animal, adapted to each element in particular, such as the eye, for the light of the Sun; the ear, for the sounds of the air; the foot, for the ground which is to support it: but determined, besides, that every animal should have each of those organs by pairs.

Certain Sages have considered this admirable duplication as a pre-disposition of Providence, in order that the animal might have a substitute always at hand, to supply the loss of one of the double organs, exposed as they are to so many accidents; but it is remarkable, that the interior parts of the body, which, at first sight, appear to be single, present, on closer examination, a similar duplicity of forms, even in the human body, where they are more confounded than in other animals. Thus the five lobes of the lungs, one of which has a kind of division; the fissure of the liver; the supernal separation of the brain, by the reduplication of the *dura-mater*; the *septum lucidum*, similar to a leaf of talc, which separates the two anterior ventricles

tricles of it; the two ventricles of the heart; and the divisions of the other *viscera* announce this double union, and seem to indicate, that *the very principle of life, is the consonance of two similar harmonies* *.

There farther results from this duplicity of organs, a much more extensive range of utility than if they had been single. Man, by the assistance of

* Each organ is itself in opposition with the element for which it is destined; so that from their mutual opposition arises a harmony which constitutes the pleasure enjoyed by that organ. This is very remarkable, and confirms the principles which we have laid down. Thus, the organ of vision, adapted principally to the Sun, is a body singularly opposite to him, in that it is almost entirely aqueous. The Sun emits luminous rays; the eye, on the contrary, is surrounded by a dusky eye-brow which overshadows it. The eye is, besides, veiled with a lid which can be raised and dropped at pleasure; and it farther opposes to the whiteness of the light, a tunic entirely black, called the *uvea*, which clothes the extremity of the optic nerve.

The other parts of the body present, in like manner, oppositions to the action of the elements to which they are adapted. Accordingly, the feet of animals which scramble among rocks are provided with pincers, as those of tygers and lions. Animals which inhabit cold countries, are clothed with warm furs, and so on. But, with all this, we must not always reckon on finding these contraries of the same species in every animal. Nature possesses an infinite variety of means, for producing the same effects, conformably to the necessities of every individual.

two eyes, can take in, at once, more than half of the Horizon ; with a single one, he could scarcely have embraced a third part. Provided with two arms, he can perform an infinite number of actions which he never could have accomplished with one only ; such as raising upon his head a load of considerable size and weight, and clambering up a tree. Had he been placed upon one leg, not only would his position be much more unsteady than upon two, but he would be unable to walk ; his progressive motion would be reduced to crawling, or hopping. This method of advancing would be entirely discordant to the constitution of the other parts of his body, and to the variety of soils over which he is destined to move.

If Nature has given a single exterior organ to animals, such as the tail, it is because the use of it, being extremely limited, extends but to a single action to which it is fully equivalent. Besides, the tail, from its situation, is secured against almost every danger. Farther, hardly any but the very powerful animals have a long tail, as bulls, horses, and lions. Rabbits and hares have it very short. In feeble animals, which have one of considerable length, as the thornback, it is armed with prickles, or else it grows again, if it happens to be torn off by an accident, as in the case of the lizard. Finally,

nally, whatever may be the simplicity of it's use, this is remarkable, it is formed of two similar halves, as the other parts of the body.

There are other interior consonances, which collect diagonally, if I may use the expression, the different organs of the body, in order to form but one only and single animal of it's two halves. I leave to Anatomists the investigation of this incomprehensible connection : but, be their knowledge ever so extensive, I much doubt whether they will ever be able to trace the windings of this labyrinth. Why, for instance, should the pain which attacks a foot, make itself felt, sometimes, in the opposite part of the head, and *vice versâ*? I have seen a very astonishing proof of this consonance in the case of a serjeant, who is still living, I believe, in the Hospital of Invalids. This man having a fencing bout one day with a comrade, who, as well as himself, made use of his undrawn sword, received a thrust in the lacrymal angle of the left eye, which immediately deprived him of his senses. On coming to himself, which did not happen till several hours afterward, he was found to be completely paralytic in his right leg and right arm, and no medical assistance has ever been able to restore the use of them *.

* This soldier was of Franche-Comté. I never saw him but once, and I have forgotten his name, as well as that of the regiment

I must here observe, that the cruel experiments every day made on brutes, in the view of discovering these secret correspondencies of Nature, serve only to spread a thicker veil over them; for their muscles, contracted by terror and pain, derange the course of the animal spirits, accelerate the velocity of the blood, put the nerves into a state of convulsion, and tend much rather to unhinge the animal economy, than to unfold it. These barbarous means, employed by our modern Physicks, have an influence still more fatal on the morals of those who practise them; for, together with false information, they inspire them with the most atrocious of all vices, which is cruelty.

If Man may presume to put questions to Nature respecting the operations which she is pleased to conceal, I should prefer the road of pleasure to

ment to which he belonged; but I have not lost the recollection of his virtuous conduct, which was reported to me on undoubted authority. When the accident above related sent him to the Invalids, he remembered that, in his capacity of serjeant, he had inveigled, at the instigation of his captain, in a country village, a young fellow to enlist, who was the only son of a poor widow, and who was killed three months afterward in an engagement. The serjeant recollecting this act of cruelty and injustice, formed the resolution of abstaining from wine. He sold his allowance as a pensioner in the Hospital of the Invalids, and remitted the amount every six months to the mother whom he had robbed of her son

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that of pain. Of the propriety of this sentiment, I was witness to an instance, at a country-seat in Normandy. Walking in one of the adjoining fields, with a young gentleman, who was the proprietor of them; we perceived bulls a-fighting. He ran up to them, with his staff brandished, and the poor animals instantly gave up their contention. He presently went up to the most ferocious of the tribe, and began to tickle him, with his fingers, at the root of the tail. The animal, whose eyes were still inflamed with rage, became motionless, with outstretched neck, expanded nostrils, transpiring the air with a satisfaction which most amusingly demonstrated the intimate correspondence between this extremity of his body and his head.

The duplicity of organs is farther observable, even in vegetables, especially in their essential parts, such as the *antheræ* of the flowers, which are double bodies; in their petals, one half of which corresponds exactly to the other; in the lobes of their seed, &c. A single one of these parts, however, appears to me sufficient, for the expansion and the generation of the plant. This observation might be extended to the very leaves, the two halves of which are correspondent in most vegetables; and if any one of them recedes from this

order, it is, undoubtedly, for some particular reason, well worthy of investigation.

These facts confirm the distinction which we have made between the parts and the members of a body ; for in the leaves where this duplicity occurs, the vegetative faculty is usually to be found, which is diffused over the body of the vegetable itself. So that if you carefully replant those leaves, and at the proper season, you will see the complete vegetable thence re-produced. Perhaps, it is because the interior organs of the tree are double, that the principle of vegetative life is diffused even over it's slips, as we see it in a great number which sprout again from one branch. Nay, there are some which have the power of perpetuating themselves by cuttings simply. Of this we have a noted instance in the memoirs of the Academy of Sciences. Two sisters, on the death of their mother, became heiresses of an orange-tree. Each of them insisted on having it thrown into her allotment. At length, after much wrangling, and neither being disposed to resign her claim, it was settled that the tree should be cleft in two, and each take her half. The orange-tree, accordingly, underwent the judgment pronounced by *Solomon* on the child. It was cleft asunder ; each of the sisters replanted her own half, and, wonderful to be told ! the tree, which,

which had been separated by fisterly animosity, received a new clothing of bark from the benignant hand of Nature.

It is this universal consonance of forms which has suggested to Man the idea of symmetry. He has introduced it into most of his works of art, and particularly into Architecture, as an essential part of order. To such a degree, in fact, is it the work of intelligence and of combination, that I consider it as the principal character by which we are enabled to distinguish all organized bodies from such as are not so, and are only results of a fortuitous aggregation, however regular their assemblage may appear; such as those which produce crystallizations, efflorescences, chemical vegetations, and igneous effusions.

It was in conformity to these reflections that, on considering the Globe of the Earth, I observed, with the greatest surprise, that it too presented, like every organized body, a duplicity of form. From the beginning it had been my thought, that this Globe being the production of an Intelligence, order must of necessity pervade it. I had discerned, and admired, the utility of islands, and even of that of banks, of shelves, and of rocks, to protect the parts of the Continents which are most exposed to the Currents of the Ocean, at the ex-

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tremities

tremities of which they are always situated. I had, in like manner, discerned the utility of bays, which are, on the contrary, removed from the Currents of the Ocean, and hollowed into deep retreats to shelter the discharge of rivers, and to serve, by the tranquillity of their waters, as an asylum to the fishes, which in all seas retire thither in shoals, to collect the spoils of vegetation, and the alluvions of the Land, which are there disgorged by the rivers. I had admired, in detail, the proportions of their different fabrics, but had formed no conception of their combination. My mind was bewildered amidst such a multiplicity of cuttings and carvings, of land and sea; and I should, without hesitation, have ascribed the whole to chance, had not the order, which I perceived in each of the parts, suggested to me the possibility, that there might exist order also, in the totality of the Work.

I am now going to display the Globe under a new aspect. The Reader will, I hope, forgive this digression, which exhibits to him one little fragment of the materials I had laid up, for a geographical structure, but which tends to prove the universality of the natural Laws, whose existence I am endeavouring to establish. I shall be, as usual, rapid and superficial: but it is a matter of very inferior importance to myself, should I enfeeble
ideas,

ideas, which I have not been permitted to arrange in their natural order, provided I am enabled to transmit the germ of them into a head superior to my own.

I first endeavoured to find out consonances between the northern and southern halves of the Globe. But so far from discovering resemblances between them, I perceived nothing but oppositions; the northern being, if I may so express myself, a terrestrial Hemisphere only, and the southern a maritime; and so different from each other, that the Winter of the one is the Summer of the other; and that the seas of the first Hemisphere seem to be opposed to the lands, and to the islands, which are scattered over the second. This contrast presented to me another analogy with an organized body: for, as we shall see in the following articles, every organized body has two halves in contrast, as there are two in consonance.

I found in it then, under this new aspect, something like an analogy with an animal, the head of which should have been to the North, from the attraction of the magnet, peculiar to our Pole, which seems there to fix a *sensorium*, as in the head of an animal: the heart under the Line, from the constant heat which prevails in the Torrid Zone, and which seems to determine this as the region of

the heart; finally, the excretory organs in the southern part, in which the greatest Seas, the vast receptacles of the alluvions of Continents, are situated; and where we, likewise, find the greatest number of volcanos, which may be considered as the excretory organs of the Seas, whose bitumens and sulphurs they are incessantly consuming. Besides, the Sun, who sojourns five or six days longer in the Northern Hemisphere, seemed to present to me a farther, and a more marked, resemblance to the body of an animal, in which the heart, the centre of heat, is somewhat nearer to the head, than to the lower extremities.

Though these contrasts appeared to me sufficiently determinate to manifest an order on the Globe, and though I perceived something similar in vegetables, distinguished as they are into two parts, opposite in functions and in forms, such as the leaves and the roots; I was afraid of giving scope to my imagination, and of attempting to generalize, through the weakness of the human mind, the Laws of Nature peculiar to each existence, by extending them to kingdoms, which were not susceptible of the application.

But I ceased to doubt of the general order of the Globe, when, with two halves in contrast, I found two others in consonance. I was struck with

with astonishment, I must confess, when I observed, in the duplicity of forms which constitute it, members exactly repeated on that side and on this.

The Globe, if we consider it from East to West, is divided, as all organized bodies are, into two similar halves, which are the Old and the New World. Each of their parts mutually corresponds in the eastern and western Hemispheres ; sea to sea, island to island, cape to cape, peninsula to peninsula. The lakes of Finland, and the gulf of Archangel, correspond to the lakes of Canada and Baffin's-bay ; Nova Zembla to Greenland ; the Baltic to Hudson's-bay ; the Islands of Great-Britain and Ireland, which cover the first of these mediterraneans, to the Islands of Good-Fortune and Welcome, which protect the second ; the Mediterranean, properly so called, to the gulf of Mexico, which is a kind of mediterranean, formed, in part, by islands. At the extremity of the Mediterranean, we find the isthmus of Suez in consonance with the isthmus of Panama, placed at the bottom of the gulf of Mexico. Conjoined by those isthmuses, the peninsula of Africa presents itself in the Old World, and the peninsula of South-America in the New. The principal rivers of these divisions of the Globe front each other in like manner ; for the Senegal discharges itself into the Atlantic, directly opposite to the river of the Amazons. Finally, each of these peninsulas, ad-

vancing toward the South Pole, terminates in a cape equally noted for violent tempests, the Cape of Good-Hope, and Cape-Horn.

There are, besides, between these two Hemispheres, a variety of other points of consonance, on which I shall no longer insist. These different particulars, it is admitted, do not correspond in exactly the same Latitudes : but they are disposed in the direction of a spiral line winding from East to West, and extending from North to South, so that these corresponding points proceed in a regular progression. They are nearly of the same height, setting out from the North, as the Baltic and Hudson's-bay ; and they lengthen in America, in proportion as it advances toward the South. This progression makes itself farther perceptible along the whole length of the Old Continent, as may be seen from the form of it's Capes, which, taking the point of departure from the East, lengthen so much the more toward the South, as they advance toward the West ; such as the Cape of Kamchatka, in Asia ; Cape Comorin, in Arabia ; the Cape of Good-Hope, in Africa ; and, finally, Cape-Horn, in America.

These differences of proportion are to be accounted for from this, that the two terrestrial Hemispheres are not projected in the same manner ;
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for the Old Continent has it's greatest breadth from East to West, and the New has it's greater extent from North to South ; and it is manifest, that this difference of projection has been regulated by the AUTHOR of Nature, for the same reasons which induced Him to bestow double parts on animals and on vegetables, in order that, if necessity required, the one might supply what was deficient in the other, but principally that they might be of mutual assistance.

If, for example, there existed only the Ancient Continent, with the South-Sea alone, the motion of that Sea being too much accelerated, under the Line, by the regular winds from the East, would, after having surrounded the Torrid Zone, advance with incredible fury, and attack tremendously the Land of Japan : for the size of the billows of a Sea, is always in proportion to it's extent. But from the disposition of the two Continents, the billows of the great eastern Current of the Indian Ocean, are partly retarded by the archipelagos of the Moluccas and Philippine Islands ; they are still farther broken by other islands, such as the Maldivia, by the Capes of Arabia, and by that of Good-Hope, which throws them back toward the South. Before they reach Cape-Horn, they have to encounter new obstacles, from the Current of the South Pole, which then crosses their course,
and

and the change of the monsoon, which totally destroys the cause of the commotion at the end of six months. Thus, there is not a single Current, be it easterly or northerly, which pervades so much as a quarter of the Globe, in the same direction. Besides, the division of the parts of the Globe into two, is so necessary to it's general harmony, that if the channel of the Atlantic Ocean, which separates them, had no existence, or were in part filled up, according to a supposition once entertained, by the great island Atlantis *, all the oriental rivers of America, and all the occidental of Europe would be dried up; for those rivers owe their supplies only to the clouds which emanate from the Sea. Besides, the Sun enlightening, on our side, only one terrestrial Hemisphere, the mediterraneans of which would disappear, must burn it up with his rays; and at the same time, as he warmed, on the other side, a Hemisphere of water only, most of the islands of which would sink of course, because the quantity of that Sea must be increased by the subtraction of ours, an immensity of vapour would arise, and go merely to waste.

It would appear that, from these considerations, Nature has not placed in the Torrid Zone the

* A fabulous island imagined by *Plato*, as has been demonstrated by many learned men, allegorically to represent the Athenian Government.

greatest

greatest length of the Continents, but only the mean breadth of America and of Africa, because the action of the Sun would there have been too vehement. She has placed there, on the contrary, the longest diameter of the South-Sea, and the greatest breadth of the Atlantic Ocean, and there she has collected the greatest quantity of islands in existence. Farther, she has placed in the breadth of the Continents, which she has there lengthened out, the greatest bodies of running water that are in the World, all issuing from mountains of ice; such as the Senegal and the Nile, which issue from the mountains of the Moon in Africa; the Amazon and the Oroonoko, which have their sources in the Cordeliers of America.

Again, it is for this reason that she has multiplied, in the Torrid Zone, and in it's vicinity, lofty chains of mountains covered with snow, and that she directs thither the winds of the North Pole and of the South Pole, of which the Trade-winds always partake. And it is very remarkable, that several of the great rivers which flow there, are not situated precisely under the Line, but in regions of the Torrid Zone, which are hotter than the Line itself. Thus, the Senegal rolls it's stream in the vicinity of Zara, or the Desert, which, if
we

we may credit the concurring testimony of all travellers, is the hottest part of Africa.

From all this taken together, we have a glimpse of the necessity of two Continents, to serve mutually as a check to the movements of the Ocean. It is impossible to conceive how Nature could have disposed them otherwise, than by extending one of them lengthways, and the other in breadth, in order that the opposed Currents of their Ocean might balance each other, and that there might thence result a harmony, adapted to their shores, and to the islands contained in their basins.

Were we to suppose these two Continents projected circularly, from East to West, under the two temperate Zones, the circulation of the Sea contained between the two, would be, as we have seen, too violently accelerated by the constant action of the East-wind. There could be no longer any communication by Sea, from the Line toward the Poles; consequently, no icy effusions in that Ocean, no tides, no cooling, and no renovation, of it's waters. If we suppose, on the contrary, both Continents extended from North to South, as America is, there would be no longer any oriental Current in the Ocean; the two halves of each Sea would meet in the midst of their channel,
and

and their polar effusions would there encounter each other with an impetuosity of commotion, of which the icy effusions precipitated from the Alps, with all the dreadful ravages which they commit, convey but a faint idea. But by the alternate and opposite Currents of the Seas, the icy effusions of our Pole proceed, in Summer, to cool Africa, Brazil, and the southern parts of Asia, forcing its way beyond the Cape of Good-Hope, by the Monsoon which then carries the Current of the Ocean toward the East; and, during our Winter, the effusions of the South-Pole proceed toward the West, to moderate, on the same shores, the action of the Sun, which is there unremitting. By means of these two spiral motions of the Seas, similar to those of the Sun in the Heavens, there is not a single drop of water but what may make the tour of the Globe, by evaporation under the Line, dissolution into rain in the Continent, and congelation under the Pole. These universal correspondencies are so much the more worthy of being remarked, that they enter into all the plans of Nature, and present themselves in the rest of her Works.

From any other imaginable order would result other inconveniencies, which I leave the Reader to find out. Hypotheses *ab absurdo*, are at once amusing and useful; they change, it is true, natural proportions into caricatures; but they have
this

this advantage, that, by convincing us of the weakness of our own understanding, they impress us with a deep sense of the wisdom of Nature. Let us recollect the Socratic method of ratiocination. Do not let us waste our time in overturning systems which present to us plans different from those we see. Let us only deduce consequences from them : to admit them is complete refutation.

I could farther demonstrate, that most islands themselves consist of double parts, as the Continents, of which, as I have elsewhere said, they are abridgments, from their peaks, their mountains, their lakes, and their rivers, proportioned to their extent. Many of those which are situated in the Indian Ocean, have, if I may so express myself, two Hemispheres, the one oriental, the other occidental, divided by mountains which go from North to South, so that when it is Winter on one side, Summer reigns on the other, and reciprocally ; such are the islands of Java, Sumatra, Borneo, and most of the Philippines and Moluccas ; so that they are evidently constructed for the two Monsoons of the Ocean in which they are placed.

Did time permit, the varieties of their construction, would furnish me with many curious remarks, tending to confirm, in particular, what I have said, in general, respecting the consonancies of
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the Globe. For my own part, I believe these principles of order to be so certain, that I am persuaded it might be possible, on seeing the plan of an island, with the elevation and the direction of it's mountains, to ascertain it's longitude, it's latitude, and what are the winds which most regularly blow there. Nay, I farther believe, that with these last given, we might, *vice versâ*, trace the plan and shape of an island, situated in whatever part of the Ocean. From this, however, I except fluviatric islands, and such as, being too small of themselves, are collected into archipelagos, as the Maldivias; because such islands have not the centre of all their adaptations in themselves, but are subordinated to the adjoining rivers, archipelagos, and continents.

It is indubitably certain that I advance no paradox, when I compare, between the Tropics, the general form of the islands which are exposed to the two Monsoons, and that of the islands which are under the regular East wind. We have just observed, that Nature had given, in a certain sense, two Hemispheres to the first, in dividing them through the middle by a chain of mountains running North and South, in order that they might receive the alternate influences of the East and West winds, which blow there, by turns, six months

months of the year ; but in the islands situated in the South-Sea and the Atlantic Ocean, where the East-wind blows incessantly from the same quarter, she has placed the mountains at the extremity of the Land, in the part most remote from the wind, that the brooks and rivers formed from the clouds, which are accumulated by that wind on their peaks, may flow through the whole extent of these isles.

I am sensible that I have elsewhere related these last observations, but I here present them in a new light. Besides, should I sometimes fall into repetition, there can be no great harm in repeating new truths, and some indulgence is due to the weakness of him who announces them.

OF PROGRESSION.

Progression is a series of consonances, ascending or descending. Wherever we meet progression, it produces exquisite pleasure, because it excites in our soul the sentiment of infinity, so conformable to our nature. I have already said, and it cannot be repeated too frequently : Physical sensations delight us only in so far as they awaken an intellectual sentiment.

When

When the leaves of a vegetable are arranged round it's branches, in the same order that the branches themselves are round the stem, there is consonancy, as in pines ; but if the branches of that vegetable are farther disposed among themselves, on similar plans, which go on diminishing in magnitude, as in the pyramidical form of firs, there is progression ; and if these trees are themselves disposed in long avenues, decreasing in height and in colouring, like their particular mass, our pleasure is heightened, because the progression becomes infinite.

From this instinct of infinity it is that we take pleasure in viewing every object which presents us with a progression ; as nursery-grounds, containing plants of different ages, hills rising off to the Horizon in successive elevations, perspectives without a termination.

Montesquieu has, nevertheless, remarked that, if the road from Petersburg to Moscow is in a straight line, the traveller must die upon it with languor. I have performed that journey, and can confidently affirm, from personal knowledge, that the road is very far from being in a straight line. But admitting it to be so, the languor of the traveller would arise from the very sentiment of infinity, joined to the idea of fatigue. It is this same

sentiment, so delicious when it blends with our pleasures, which overwhelms us with anguish unutterable when connected with calamity ; as we but too frequently experience. However, I believe that we should sink, at length, under the weight of an unbounded perspective, from it's presenting infinity to us, always in the same manner ; for our soul has not only the instinct of it, but likewise that of universality, that is, of every possible modification of infinity.

Nature has not formed, after our limited manner, perspectives with one or two consonances ; but she composes them of a multitude of different progressions, by introducing that of plans, magnitudes, forms, colours, movements, ages, kinds, groups, seasons, latitudes ; and by combining with these an infinity of consonances, deduced from reflexes of light, of waters, of sounds.

Let me suppose that she had been limited to the plantation of an avenue from Paris to Madrid, with one single genus of trees, say the fig ; I do not apprehend I should tire on performing that journey. I should see upon it one species of the fig-tree bearing the fruit called by the Latins *mamillanæ* *, because it had a resemblance to a

* See *Pliny's Natural History*, book xv. chap. 18.

woman's breast, in Latin *mamilla* : another species, with figs quite red, and not bigger than an olive, such as those of Mount Ida ; another with white fruit ; with black ; of the colour of porphyry, and thence called, by the Ancients, *porphyritæ*. In the course of this track would likewise occur the fig-tree of Hyrcania, loaded with more than two hundred bushels of fruit ; the ruminal fig-tree, the species under the shade of which *Romulus* and *Remus* were suckled by a she-wolf ; the fig-tree of *Hercules* ; in a word, the nineteen species enumerated by *Pliny*, and a great variety of others, unknown to the Romans and to us. Each of these species of trees would exhibit vegetables of various magnitude ; young, old, solitary, in clusters ; some planted by the brink of rivulets, some issuing from the clefts of rocks. Each tree would present the same variety in it's fruits exposed, on one single foot, if I may use the expression, to different Latitudes, to the South, to the North, to the East, to the West, to the Sun, and under shade of the leaves : some of them would be green, and just beginning to shoot, others violet, and cracked, their crevices stored with honey. On the other hand, we should find some, under different Latitudes, in the same degree of maturity, as if they hung upon the same tree, those which grow to the North being, in the bottom of valleys, sometimes as forward as those which, though

much farther to the South, ripen more slowly, from their situation on the tops of mountains.

These progressions are to be found in the minutest of the works of Nature, and of which they constitute the principal charm. They are not the effect of any mechanical Law. They have been apportioned to each vegetable, for the purpose of prolonging the enjoyment of it's fruit, conformably to the wants of Man. Thus the aqueous and cooling fruits, such as those of a ruddy hue, appear only during the season of heat ; others, which were necessary in the Winter time, from their nutritive flours, and their oils, as chestnuts and walnuts, are capable of being preserved a considerable part of the year. But those which are designed to supply the accidental demands of Mankind, those of travellers and navigators, for instance, remain on the earth at all times. Not only are these left inclosed in shells, adapted to their preservation, but they appear upon the tree, at all seasons, and in every degree of maturity. In tropical countries, on the uninhabited shores of the islands*, the cocoa-tree bears, at once, twelve or fifteen clusters of cocoa-nuts, some of which are still in the bud ; others are in flower ; others are knit ; others are already full of milk ;

* See *Francis Pyvard's Voyage to the Maldivias.*

and,

and, finally, some are in a state of perfect maturity. The cocoa is the seaman's tree.

It is not the heat of the Tropics which gives to this tree a fecundity so constant, and so varied ; for the fruits of the trees have, in the Indies, as in our climates, seasons of ripening, and after which they are seen no more till the season returns. I know of no other, except the cocoa-tree and the banana, which are in fruit all the year round. This last mentioned plant is, in my opinion, the most useful in the World, because it's fruit makes excellent food, without any art of cookery, having a most agreeable flavour, and possessing very nutrimental qualities. It produces a cluster, or aggregation, of sixty or fourscore fruit, which come to maturity all at once ; but it pushes out shoots of every degree of magnitude, which bear in succession, and at all times. The progression of fruits in the cocoa, is in the tree, and that of the fruits of the banana is in the plantation. Univerfally, that which is most useful, is likewise most common.

The productions of our corn-fields and vineyards present dispositions still more wonderful ; for, though the ear of corn has several faces, it's grains come to maturity at the same time, from the mobility of it's straw, which presents them to

all the aspects of the Sun. The vine does not grow in form of a bush, nor of a tree; but in hedge-rows; and though its berries be arranged in form of clusters, their transparency renders them throughout penetrable by the rays of the Sun. Nature thus lays men under the necessity, from the spontaneous maturity of these fruits, destined to the general support of human life, to unite their labours, and mutually to assist each other in the pleasant toils of the harvest and of the vintage. The corn-field and the vineyard may be considered as the most powerful cements of society. *Bacchus* and *Ceres*, accordingly, were regarded, in ancient times, as the first Legislators of the Human Race. The Poets of antiquity frequently distinguish them by this honourable appellation. An Indian, under his banana and his cocoa tree, can do extremely well without his neighbour. It is for this reason, I believe, rather than from the nature of the climate, which is there very mild, that there are so few republics in India, and so many governments founded in force. One man can there make an impression on the field of another, only by the ravages which he commits: but the European, who sees his harvests grow yellow, and his grapes blacken all at once, hastens to summon to his assistance, in reaping his crop, not only his neighbours, but the traveller who happens to be passing that way. Besides, Nature, while she has
refused

refused to the corn-plant and the vine the power of yielding their fruits at all seasons of the year, has bestowed on the flour of the one, and on the wine of the other, the quality of being preservable for ages.

All the Laws of Nature have a respect to our necessities; not only those which are evidently contrived to minister to our comfort; but others frequently concur to this end so much the better, the more that they seem to deviate from it.

OF CONTRASTS.

Contrasts differ from contraries in this, that contraries act but in one single point, and contrasts in their general combination. An object has but one contrary, but it may have many contrasts. White is the contrary of black; but it contrasts with blue, green, red, and various other colours.

Nature, in order to distinguish the harmonies, the consonances, and the progressions of bodies, from each other, makes them exhibit contrasts. This Law is so much the less observed, the more common it is. We trample under foot truths the most wonderful, and of the highest importance, without paying the slightest attention to them.

All Naturalists consider the colours of bodies as simple accidents; and most of them look on their very forms as the effect of some attraction, incubation, crystallization, &c. Books are every day composed, the object of which is to extend, by analogies, the mechanical effects of those Laws to the different productions of Nature; but if they really possess so much power, How comes it that the Sun, that universal agent, has not long ere now filled the waters, the dry land, the forests, the heavens, the plains, and all the creatures over which he exercises so much influence, with the uniform and monotonous effects of his light? All these objects ought to assume his appearance, and present only white or yellow to our eyes, and be distinguished from each other only by their shades. A landscape ought to exhibit to us no other effects but those of a cameo, or of a print. Latitudes, we are told, diversify the colour of them. But if Latitudes have this power, How comes it to pass, that the productions of the same climate, and of the same field, have not all the same tints? Whence is it that the quadrupeds, which are born and die in the meadow, do not produce young ones green as the grass on which they feed?

Nature has not satisfied herself with establishing particular harmonies in every species of beings, in order to characterize them; but that they might
not

not be confounded among themselves, she exhibits them in contrasts. We shall see, in the following Study, for what particular reason she has bestowed upon herbs a green hue, in preference to every other colour. In general she has made herbs green, to detach them from the earth; and then she has given the colour of the earth to animals which live on herbage, to distinguish them, in their turn, from the ground over which they stray. This general contrast may be remarked in the herbivorous quadrupeds, such as the domestic animals, the yellow beasts of the forests, and in all the granivorous birds, which live among herbage, or in the foliage of trees, as the hen, the partridge, the quail, the lark, the sparrow, and many others, which are of earthy colours, because they live among verdure. But those, on the contrary, who live on dingy grounds are clad in brilliant colours, as the bluish tom-tit, and the wood-pecker, which scramble along the rind of trees in pursuit of insects, and many others.

Nature universally opposes the colour of the animal to that of the ground on which it is destined to live. This most admirable Law admits not of a single exception. I shall here produce a few examples of it, to put my Reader in the way of observing those delightful harmonies, of which
he

he will find abundant proofs in every climate. There is seen, on the shores of India, a large and beautiful bird, white and fire-coloured, called the *flamingo*, not that it is of *Flemish* extraction, but the name is derived from the old French word *flambant*, (flaming) because it appears, at a distance, like a flame of fire. He generally inhabits in swampy grounds, and salt marshes, in the waters of which he constructs his nest, by raising out of the moisture, of a foot deep, a little hillock of mud, a foot and a half high. He makes a hole in the summit of this little hillock ; in this the hen deposits two eggs, and hatches them, with her feet sunk in the water, by means of the extreme length of her legs. When several of these birds are sitting at the same time on their eggs, in the midst of a swamp, you would take them, at a distance, for the flames of a conflagration, bursting from the bosom of the waters.

Other fowls present contrasts of a different kind, on the same shores. The pelican, or wide-throat, is a bird white and brown, provided with a large bag under it's beak, which is of excessive length. Out he goes every morning to store his bag with fish : and, the supply of the day having been accomplished, he perches on some pointed rock, on a level with the water, where he stands immovable

able till the evening, says Father *Du Tertre**,
 “ as in a state of profound sorrow, with the head
 “ drooping, from the weight of his long bill, and
 “ eyes fixed on the agitated Ocean, as motionless
 “ as a statue of marble.” On the dusky strand of
 those seas may frequently be distinguished herons
 white as snow, and in the azure plains of the sky,
 the pailleur of a silvery white, skimming through
 it almost out of sight: he is sometimes glazed
 over with a bright red, having likewise the two
 long feathers of his tail the colour of fire, as that
 of the South-Seas.

In many cases, the deeper that the ground is,
 the more brilliant are the colours in which the
 animal, destined to live upon it, is arrayed. We
 have not, perhaps, in Europe, any insect with
 richer and gayer clothing than the stercoraceous
 scarab, and the fly which bears the same epithet.
 This last is brighter than burnished gold and
 steel; the other, of a hemispherical form, is of a
 fine blue, inclining to purple: and, in order to
 render the contrast complete, he exhales a strong
 and agreeable odour of musk.

Nature seems, sometimes, to deviate from this
 Law, but then it is from other reasons of confor-

* History of the Antilles.

mity, according to which all her plans are adjusted. Thus, after having contrasted, with the ground on which they live, the animals capable of making their escape from every danger by their strength, or their agility, she has confounded those whose slowness, or weakness, would expose them to the assaults of their enemies. The snail, which is destitute of sight, is of the colour of the bark of the trees which he gnaws, or of the wall in which he takes refuge.

Flat fishes, which are indifferent swimmers, such as the turbot, the flounder, the plaice, the burt, the sole, and several others, which are cut out, as it were, from a thin plank, because they were destined to a sedentary life, close to the bottom of the Sea, are of the colour of the sands where they find their nourishment, being spotted, like the beach, with gray, yellow, black, red, and brown. They are thus speckled, I admit, only on one side ; but to such a degree are they possessed of the feeling of this resemblance, that when they find themselves inclosed within the parks formed on the strand to entrap them, and observing the tide gradually retiring, they bury their fins in the sand, expecting the return of the tide, and present to the eye only their deceitful side. It has such a perfect resemblance to the ground on which they squat, to conceal themselves, that it would be impossible for
the

the fishermen to distinguish them from it, without the help of sickles, with which they trace small fosses, in every direction, along the surface of the sand, to detect by the touch what the eye could not discern. Of this I have been a witness oftener than once, much more highly amused at the dexterity displayed by the fishes, than at that of the fishermen.

The thornback, on the contrary, which is also a flat fish, and a bad swimmer, but carnivorous, is marbled with white and brown, in order to be perceived at a distance by other fishes; and to prevent their being devoured, in their turn, by their enemies, which are very alert, such as the sea-dog, or by their own companions, for they are extremely voracious, Nature has clad them in a prickly mail, particularly on the posterior part of the body, as the tail, which is most exposed to attack when they fly.

Nature has bestowed at once, in the colours of innoxious animals, contrasts with the ground on which they live, and consonances with that which is adjacent, and has superadded the instinct of employing these alternately, according as good or bad fortune prompts. These wonderful accommodations may be remarked in most of our small birds, whose flight is feeble, and of short duration.

tion. The gray lark finds her subsistence among the grafs of the plains. Does any thing terrify her? She glides away, and takes her station between two little clods of earth, where she becomes invifible. On this poft ſhe remains in ſuch perfect tranquillity, as hardly to quit it, when the foot of the fowler is ready to crush her.

The ſame thing is true of the partridge. I have no doubt that theſe defenceleſs birds have a ſenſe of thoſe contraſts and correſpondencies of colour, for I have remarked it even in inſects. In the month of March laſt, I obſerved, by the brink of the rivulet which waſhes the Gobelins*, a butterfly of the colour of brick, reſting with expanded wings on a tuft of grafs. On my approaching him, he flew off. He alighted, at ſome paces diſtance, on the ground, which, at that place, was of the ſame colour with himſelf. I approached him a ſecond time; he took a ſecond flight, and perched again on a ſimilar ſtripe of earth. In a word, I found it was not in my power to oblige him to alight on the grafs, though I made frequent attempts to that effect, and though the ſpaces of earth which ſeparated the tuſſy ſoil were narrow, and few in number.

* A ſmall village in the ſuburbs of Paris, noted for it's manufactures in fine tapeſtry, and ſuperb mirrors. H H.

This

This wonderful instinct is, likewise, conspicuously evident in the *cameleon*. That species of lizard, whose motion is extremely slow, is indemnified for this, by the incomprehensible faculty of assuming, at pleasure, the colour of the ground over which he moves. With this advantage, he is enabled to elude the eye of his pursuer, whose speed would soon have overtaken him. The faculty is in his will, for his skin is by no means a mirror. It reflects only the colour of objects, and not their form. What is farther singularly remarkable in this, and perfectly ascertained by Naturalists, though they assign no reason for it, he can assume all colours, as brown, gray, yellow, and especially green, which is his favourite colour, but never red. The *cameleon* has been placed, for weeks together, amidst scarlet stuffs, without acquiring the slightest shade of that colour. Nature seems to have withheld from the creature this shining hue, because it could serve only to render him perceptible at a greater distance; and, farther, because this colour is that of the ground of no species of earth, or of vegetable, on which he is designed to pass his life.

But, in the age of weakness and inexperience, Nature confounds the colour of the harmless animals, with that of the ground on which they inhabit, without committing to them the power of choice.

The

The young of pigeons, and of most granivorous fowls, are clothed with a greenish shaggy coat, resembling the mosses of their nests. Caterpillars are blind, and have the complexion of the foliage, and of the barks, which they devour. Nay, the young fruits, before they come to be armed with prickles, or inclosed in cases, in bitter pulps, in hard shells, to protect their seeds, are, during the season of their expansion, green as the leaves which surround them. Some embryos, it is true, such as those of certain pears, are ruddy or brown; but they are then of the colour of the bark of the tree to which they belong. When those fruits have inclosed their seeds in kernels, or nuts, so as to be in no farther danger, they then change colour. They become yellow, blue, gold-coloured, red, black, and give to their respective trees their natural contrasts. It is strikingly remarkable, that every fruit which has changed colour has seed in a state of maturity.

The insects, in like manner, having deposited their robes of infancy, and now committed to their own experience, spread abroad over the World, to multiply the harmonies of it, with the attire and the instincts which Nature has conferred upon them. Then it is that clouds of butterflies, which, in their caterpillar state, were confounded with the verdure of plants, now oppose the colours
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and the forms of their wings, to those of the flowers; the red to the blue, the white to the red, the *antennæ* to the *stamina*, and fringes to the *corollæ*. I was one day struck with admiration at one of these, whose wings were azure, and besprinkled with specks of the colour of aurora, as he reposed in the bosom of a full-blown rose. He seemed to be disputing beauty with the flower. It would have been difficult to determine which way to adjudge the prize, in favour of the butterfly or of the rose; but, on seeing the flower crowned with wings of *lapis lazuli*, and the azure insect deposited in a goblet of carmine, it was obvious, on the slightest glance, that their charming contrast greatly enhanced their mutual beauty.

Nature does not employ those agreeable correspondencies and contrasts in the decoration of noxious animals, nor even of dangerous vegetables. Of whatever kind the carnivorous, or venomous animals, may be, they form, at every age, and wherever they are, oppositions harsh and disgusting. The white-bear of the North announces his approach over the snow, by a hollow noise, by the blackness of his snout and paws, and by a throat and eyes the colour of blood. The ferocious beasts, which hunt for their prey in the gloom of darkness, or in the solitude of the forests, give notice of their presence by loud roarings, lamentable cries, eyes

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inflamed, urinous or fetid smells. The crocodile, in ambush among the flags, upon the shores of the rivers in Asia, where he assumes the appearance of the trunk of a tree turned upside down, betrays himself from afar, by strong exhalations of the smell of musk. The rattle-snake, concealed in the grassy swamps of America, cannot stir without founding his ominous alarm. The very insects which make war on others, are clad in sable attire, in which colours are harshly opposed, and in which black, particularly, predominates, and clashes disagreeably with white, or yellow. The humble-bee, independantly of his buzzing noise, announces himself by the blackness of his breast-plate, and his large belly bristled over with yellow hairs. He appears amidst the flowers, like a burning coal half extinguished. The carnivorous wasp is yellow, and striped with black, like the tiger. But the useful bee is of the complexion of the *stamina* and of the *calices* of the flowers, among which she reaps her innocent harvests.

Poisonous plants present, like noxious animals, disgusting contrasts, from the livid colours of their flowers, in which black, deep blue, and a smoky violet, are in harsh opposition with the tender shades; from their nauseous and virulent smells; from their prickly foliage, of a black green hue, and clashing with white on the under-side : such
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are the aconite tribes. I am acquainted with no plant of an aspect so hideous as those of this family, and, among others, that which the French denominate *napel*, the most venomous vegetable of our climates. I shall not take upon me to determine, whether the embryos of their fruits do not disclose, from the very first moments of their expansion, harsh oppositions, which give warning of their malefic characters : if it be so, they have this farther resemblance in common to them with the young of ferocious animals.

Such of the brute creation as are intended to live on two different grounds, are impressed with a double contrast in their colours. Thus, for example, the king-fisher, which skims along rivers, is at once musk-coloured, and glazed over with azure ; so as to be detached from the dusky shores by his azure colour, and from the azure of the waters by his musk-colour. The duck, which dabbles on the same shores, has the body tinged of an ash-colour, while the head and neck are of an emerald-green ; so that he is perfectly distinguishable, by the gray colour of his body, from the verdure of the aquatic plants among which he waddles, and by the verdure of his head and neck, from the dark coloured mud where he finds part of his food, and in which, by another most astonishing contrast, he never soils his plumage.

The same contrasts of colour are observable in the wood-pecker, who lives on the trunks of trees, along which he scrambles in quest of the insects that are lodged under their rind. This bird is at once green-coloured and brown; so that, though he lives, properly speaking, in the shade, he is always perceptible, however, on the trunk of trees; for he detaches himself from their dusky rind, by means of that part of his plumage which is of a brilliant green; and from the verdure of their mosses and lichens, by those of his feathers, which are brown.

Nature opposes, then, the colours of every animal to those of the respective ground on which it is to be placed; and what confirms the truth of this Law is, that the greatest part of birds which live on one ground only, have but a single colour, and that one strongly contrasted with the colour of the ground. Accordingly, the birds which live aloft in the air, on the azury ground of the Heavens, or on the bosom of the waters, in the midst of lakes, are mostly white, which, of all colours, forms the most striking contrast with blue, and is, consequently, most adapted to render them perceptible at a distance. Such are, between the Tropics, the paillencu, a bird of a glossy white, whose flight is through the superior regions of the air, the heron, the gull, the sea-mew, which skim
along

along the surface of the azure deep, and the swan, fleets of which navigate the extensive lakes of the North.

There are likewise others which, in order to form a contrast with those that I have last mentioned, detach themselves from the skies and from the waters, by their black, or dusky colours: such are, for example, the crow, in our own climates, which is perceptible at so great a distance in the Heavens, on the white ground of the clouds; many sea-fowls of a brown and blackish colour, as the frigate of the Tropics, which plays through the air, amidst storm and tempest; the murre, or sea-cutter, a water bird, which grazes with his dark-coloured wings, shaped like a scythe, the white surface of the foamy billows of the Ocean.

From these examples, therefore, it may be inferred, that when an animal is invested with but one single tint, he is intended but for one situation; and when he combines in himself the contrast of two opposite tints, that he lives on two grounds, the colours themselves of which are determined by that of the plumage, or of the hair, of the animal. We must be upon our guard, at the same time, against an unlimited generalization of this Law. We ought to consider it as harmoniz-

ing with the exceptions which wise Nature has introduced and established, for the very preservation of animals; such as, in general, the whitening of them, to the North, in the Winter season, and on lofty mountains, as a remedy against excess of cold, by arraying them in a colour which reflects the most heat; and embrowning them to the South, during the ardors of Summer, and on sandy districts, and thereby sheltering them from the effects of burning heat, by the intervention of absorbent colours. What evidently demonstrates, that these great effects of harmony are not mechanical results of the influence of the bodies which surround animals, or of the apprehensions of the mother on the tender organs of the fœtus, or of the action of the rays of the Sun on their plumage, according to the explications hitherto attempted by our systems of physics; what evidently demonstrates this, I say, is, that among the almost infinite number of birds which pass their life in the higher regions of the air, or on the surface of the Seas, whose colours are azure, there is not a single bird of the colour of blue; and that, on the contrary, many birds which live between the Tropics, in the bosom of black rocks, or under the shade of fullen forests, are azure-coloured: such are the Batavia hen, which is blue all over; the Dutch pigeon of the Isle of France, and many others.

Another

Another consequence, equally important, may be deduced from these observations ; it is this, that all these harmonies are contrived for the use of Man. A blue-coloured fowl, on the azure ground of the sky, or on the surface of the waters, would elude our sight. Nature, besides, has reserved the rich and agreeable colours only for the birds which live in our vicinity. This is so indubitably certain, that though the Sun acts between the Tropics with the whole energy of his rays, on the fowls whose residence is the wide Ocean, there is not a single one of them arrayed in a beautifully coloured plumage, whereas those which inhabit the shores of the Seas, and of the rivers, are frequently dressed in the most gorgeous attire. The flamingo, a tall bird, which lives in the swampy shores of the South-Seas, has a white plumage charged with carmine. The toucan, on the same strands, has an enormous bill of the most lively red ; and when he retires from the bosom of the humid sands, where he finds his food, you would be tempted to say, that he has just fished out of them a stump of coral. There is another species of toucan, whose beak is white and black, as finely polished as if it consisted of ebon and ivory. The pintada, with speckled plumage, the peacock, the duck, the king-fisher, and a multitude of other river-birds, embellish, by the enamel of their colours,

lours, the banks of the Asiatic and African streams. But we find nothing once to be compared with them, in the plumage of such as inhabit the open Sea, though they are still more exposed to the influences of the Sun.

As a farther consequence of these correspondencies with Man, Nature has given to the birds which live remote from him, cries shrill, hoarse, and piercing, but which are as proper as their ill-afforded colours, to render them perceptible at a distance, amidst their wild retreats. She has bestowed, on the contrary, sweet notes and melodious voices on the little birds which people our groves, and domesticate themselves in our habitations, in order to heighten our delight, as well by the music of their warbling as by the beauty of their colours. We repeat it, in order to confirm the truth of the principles of the harmonies which we are laying down: Nature has established an order of beauty so real, in the plumage and the song of birds, that she has endowed with these such birds only, whose life was in some sort innocent relatively to Man, as those which are granivorous, or which live on insects; and she has denied those advantages to birds of prey, and to most sea-fowls, which, in general, have earthy colours, and disagreeable cries.

All

All the kingdoms of Nature present themselves to Man with the same correspondencies, the abysses of the Ocean themselves not excepted. The fishes which live on animal substances, as the whole class of the cartilaginous do, such as the seal, the sea-dog, the shark, the flipper, the thorn-back, the polypus, and many others, have disgusting forms and colours. Fishes which live in the open sea, have colours marbled with white, black, brown, which distinguish them in the bottom of the azure billows, such are whales, blowers, porpoises, and others. But it is among those which frequent the dusky shores, and particularly in the number of such as are denominated *saxatile*, because they live among the rocks, that we find the fishes, the lustre of whose skin and scales far surpasses all the efforts of the pencil, especially when they are alive. It is thus that legions of mackerel and herrings diffuse the radiance of silver and azure over the northern strands of Europe.

It is around the black rocks which bound the Seas of the Tropics, that the fish known by the name of *captain* is caught. Though his colours vary with the latitude, it is sufficient, in order to convey an idea of his beauty, to detail the description given of it by *Francis Cauche* *, in a species

* Consult *Francis Cauche*, his relation of Madagascar.

caught

caught on the coasts of Madagascar. He says, that this fish, which takes pleasure in the rocks, is streaked in the form of lozenges; that his scales are of a pale gold-colour, and that his back is coloured and glazed over with laca, inclining, in several places, toward vermilion. His dorsal fin and tail are waved with azure, fading away into green toward the extremities.

About the bottom of the same rocks is likewise found the magnificent fish called the *sardin*, and by the Brafilians *acara pinima*, of which *Marcgrave* has given the figure in his 4th Book, Chap. 6. This beautiful fish is adorned with scales of at once a gold and silver hue, crossed from head to tail by black lines, which admirably heighten their lustre. The same Author describes a variety of species of the moon-fish, besides, which frequent the same places.

For my own part, I have amused myself on the rocks of the Island of Ascension, in observing, for hours together, the moon-fish sporting amidst the tumultuous waves, which are incessantly breaking upon them. These fishes, of which there are various species, have the rounded, and sometimes sloping form of the orb of night, whose name they bear. They are, besides, like her, of the colour of polished silver. They seem destined to elude the

the sagacity of the fisherman, in every possible way ; for they have their belly streaked with black cross-stripes, of a lozenge form, which gives them all the appearance of being caught in a net ; they seem, every instant, on the point of being tossed on shore, by the agitation of the billows in which they play ; farther, their mouth is so small, that they frequently nibble away the bait without touching the hook ; and their skin, without scales, like that of the seal, is so hard, that the harpoon often misses it's blow, be the prongs ever so keenly whetted. *Francis Cauche* likewise says, that it requires a very violent exertion to make an incision into their skin with the sharpest knife.

It is on the same shores of Ascension-island that we find the *murena*, a species of lamprey, or eel of the rocks, which is excellent food, and whose skin is besprinkled with gilded flowers. It may be affirmed, in general, that every rock in the sea is frequented by a multitude of fishes, of the most brilliant colours ; such as the gilt-head, the perroquet, the zebra, the roach, and others without number, the very classes of which are unknown to us. The more that the rocks and shallows of any sea are multiplied, the more varied, likewise, are the species of the saxatile fishes which resort thither. For this reason it is, that the Maldivia-islands, which are so numerous, furnish themselves alone

alone a prodigious multitude of fishes, of very different colours and forms, with the greatest part of which our Ichthologists are hitherto totally unacquainted.

As often, therefore, as you see a brilliant fish, you may be assured that his habitation is near the shore, and that, on the contrary, he lives in the open Ocean, if he is of a dark colour. The truth of this may be ascertained by ourselves, in the channels, and on the banks of our own rivers. The silver smelt, and the blay, whose scales are employed in the formation of mock pearls, play on the strand of the Seine; whereas the eel, of the gloomy colour of slate, takes pleasure to dabble in the midst, and at the bottom of the stream. We must not, however, pretend to generalize these Laws, to the exclusion of all exceptions. Nature, as has been said, subjects all to the mutual adaptation of beings, and to the enjoyment of Man. Thus, for example, though the fishes on the shores have, in general, shining colours, there are, however, several species of them invariably of a dark colour. Such are, not only those which swim indifferently, as soles, turbot, &c. but those also which inhabit some parts of the shores whose colours are lively. Thus the tortoise, which pastures at the bottom of the sea, on green herbs, or which crawls by night over the white sands, there to de-
posit

profit her eggs, is of a shady colour ; thus the lamentine, which enters into the channel of the rivers of America, in quest of food, in the verdure of their banks, without leaving the water, detaches himself from that verdure, by the brown colour of his skin.

The faxatile fishes, which can easily insure their safety among the rocks, by agility in swimming, or by the facility of finding a retreat in their cavernous receptacles, or of there defending themselves against their enemies, by the armour which Nature has bestowed, have all of them lively and shining colours, the cartilaginous excepted : such are the blood-coloured crabs, the azure and purple lobsters, called *langouste* and *homard*, and, among others, that to which *Rondelet* has given the name of *Thetis*, on account of it's beauty, the violet-coloured urchins, armed with points and spears, the nerits, inclosed in a spiral case, with rose and gray-coloured ribbons winding round it, and an endless variety of others.

It is very remarkable that all shell-fish which walk and migrate, and, consequently, have the power of choosing their asylum, are those, in their kind, which have the richest colours : such are the nerits which I have just mentioned, the purple-fish, or Venus shell, resembling polished marble,
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the olives, shaded like velvet of three or four colours, the harp, embellished with the tints of the most beautiful tulips, the tunny, speckled like the partridge's wing, which walks along under the shade of the madrépores ; and all the families of the univalves, which force their way into the sand for shelter, the bivalves, as the ducal-cloak, scarlet-coloured and orange, and a multitude of other migrating shell-fish, are impressed with colours the most lively, and form, with the different grounds of the Sea, secondary harmonies totally unknown.

But those which do not change their situation, as most of the oysters of the seas to the southward, which frequently adhere to the rocks, or those which are perpetually at anchor in straits, as muscles and the *pinna-marina*, attached to pebbles by threads, or those which rest on the bosom of the madrépores, like vessels on the stocks, as the Noah's ark, or those which are entirely buried in the heart of calcareous rocks, as the dail of the Mediterranean, or such as are immoveable, from their weight, which sometimes exceeds that of several quintals, and pave the surface of flats, as the thuilée of the Moluccas, and the large bivalves, as the rocks, the burgos, &c. or those, in a word, which, I believe, are blind, like our land-snails, such as lempits, which fasten themselves, by the
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formation of a vacuum, on the shining surface of the rocks, are of the colour of the ground which they inhabit, in order to be less perceptible to their enemies.

It is, farther, very highly worthy of observation, that though many of those sedentary shell-fish are clothed in a brown and shaggy outward garment, as those which are called cornets and rollers; or with a black pellicle of the shade of the pebbles to which they are attached, as the Magellan-muscles; or encompassed with a mud-coloured tartar, as the lempit and the burgo: they have, under their gloomy upper-coats, pearly appearances and tints, the beauty of which frequently exceed those of the shell-fish whose apparent colours are the most brilliant. Thus the Magellan-lempit, cleansed of its tartar by means of vinegar, presents the richest of cups, shaded with the colours of the finest tortoise-shell, and blended with a burnished gold, which is perceptible through a chefnut-coloured varnish. The large muscle of Magellan's strait conceals, in like manner, under its black coat, the oriental shades of the aurora.

It is impossible to ascribe, as in the shell-fish of India, colours so charming, to the action of the Sun on these shells, covered as they are with tartars and rough coats, and which are the clothing
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of fish that live, beside, in a foggy climate, abandoned for a great part of the year to gloomy Winters and long tempests. We may venture to affirm, that Nature has veiled their beauty, only to preserve it for the enjoyment of Man, and has placed them only on the verge of the shores, where the Sea purifies them, by tossing them about, to put them within his reach. Thus, by a most wonderful contrast, she places the most brilliant shells, in regions the most exposed to the ravages of the elements; and, by another contrast, no less astonishing, she presents to the poor Patagonians spoons and cups, the lustre of which far surpasses, beyond all contradiction, the richest plate of polished Nations.

Hence it may be inferred, that fishes in general, and shell-fish in particular, which have two opposite colours, live on two different grounds, as we have observed in the case of birds, and that those which have only one colour frequent only one ground. I recollect, that on making the tour of the Isle of France, on foot, along the shore of the Sea, I found upon it nerits with an ash-gray ground, encircled with red ribbons, sometimes on the dusky rocks, sometimes on the white madrépores, with their peach-coloured flowers. They contrasted in the most agreeable manner, and appeared at the bottom, on the sea-plants,

plants, like fruit growing upon them. I likewise found there the Venus-shell, completely white, with a rose-coloured mouth, swelled backward like eggs, from which too they sometimes borrow their name. But it is now impossible for me to affirm, with certainty, whether they adhered to the dark coloured rocks, or to the white madrépores.

There are likewise to be found, on the coasts of Normandy, in the district of Caux, two sorts of rocks, the one of white marl, detached from the cliffs, the other formed of black bîsets, which are amalgamated with the craggy cliff. Now, I never saw there, in general, but two sorts of periwinkles, called by the country people *vignots*, the one very common, and used as food, which is quite black, and the other white, with a faint-red mouth. I presume not, at this distance, to aver, whether the white periwinkles attach themselves to the white rocks, and the black periwinkles to the black rocks, or contrariwise, for I did not make the observation. But whether they form with those rocks consonances or contrasts, it is very singular that, as there are but two species of rocks, so there should be but two species of periwinkles. I am inclined to believe, that the black periwinkle adheres, in preference, to the black rock; for I have

observed, in the Isle of France, that there is neither black-coloured periwinkle, nor muscle, because there is in those seas no pebble, or rock, precisely of that colour; and I am perfectly certain, that muscles are always of the colour of the ground on which they live: those of the Isle of France are brown.

It must not be concluded, on the other hand, that such shell-fish are indebted, for their colours, to the rocks on which they adhere by suction; for it would thence follow, that the rocks of Magellan's strait, which produce muscles and lempits so rich in colouring, should be themselves inlaid with mother-of-pearl, opal, and amethyst; besides, every rock maintains shell-fish of very different colours. You find, at the bottom of the rocks on the coast of the district of Caux, which are loaded with black periwinkles, the azure-coloured lobster, the crab marbled with red and brown, legions of muscles of a deep blue, with lempits of an ash-gray. All these fishes, when alive, form harmonies the most agreeable, with a multitude of marine plants, which fringe those black and white rocks, with their tints of purple, gray, rust-coloured, brown, and green; and with the variety of their forms and aggregations, like oaken boughs, tufts of different shapes, garlands, festoons, and long cordage,

age, agitated by the waves in every possible manner. In truth, there is no Painter capable of composing similar groups, let him give what scope he pleases to his imagination. Many of those marine harmonies have escaped me, for I then considered them as merely the effect of chance. I looked at them, I admired them, but I observed them not : I suspected, however, even then, that the pleasure which their harmonic combination inspired, must be referable to some Law with which I was unacquainted.

Enough has been said to demonstrate how much Naturalists have mutilated the finest portion of Natural History, by retailing, as they for the most part do, isolated descriptions of animals and of plants, without saying a word of the season when, and of the place where, they are to be found. By this negligence they strip them of all their beauty ; for there is not an animal, nor a plant existing, whose harmonic point is not fixed to a certain situation, to a certain hour of the day, or of the night, to the rising, or the setting, of the Sun, to the phases of the Moon, nay, to the very tempests ; to say nothing of the other contrasts, and correspondencies, which result from these.

I am so thoroughly persuaded of the existence of all those harmonies, that I entertain not the

glafs, changed into chalk, and the ftones of his furnace became vitrified. Though it be a rare thing to fee white earths between the Tropics, white fands are, however, common there, upon the fhores. It is certain that this colour, from it's luftre, and it's refraction to the Horizon, renders low lands perceptible at a very great diftance, as has been well remarked by *John-Hugo de Linfchotten*, who, but for thofe fentinels planted by Nature on moft of the gloomy and low coafts of India, muft there have feveral times made fhipwreck. On the coafts of the Païs de Caux the fands are gray, but the cliffs are white; together with this, they are divided into black and horizontal ftripes of pebbles, which form contralts very perceptible at a great diftance.

There are places where we find white rocks, and red lands, as in quarries of mill-ftone; from thefe refult very agreeable effects, efpecially in connection with their natural accelfories of vegetables, and of animals. I fhould digrefs too far, were I to enter into any detail on this fubject. It is fufficient for me, at prefent, to recommend to Naturalifts to ftudy Nature, as the great Painters do; that is, by uniting the harmonies of the three kingdoms. Every one, who fhall obferve in this manner, will find a new light diffufed over the perufal
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of Voyages and of Natural History, though their Authors scarcely ever speak of those contrasts, except by chance, and without expressing any doubt about the matter. But every man will be himself in a condition to discover their delightful effects, in what is called brute Nature, I mean that with which Man has not intermeddled. Let me suggest the infallible means of distinguishing them: it is simply this, as often as a natural object presents to you a sentiment of pleasure, you may rest assured that it exhibits some harmonic concert.

Beyond all doubt, animals and plants of the same climate have not received from the Sun, nor from the elements, liveries so varied, and so characteristic. A thousand and a thousand new observations may be made upon their contrasts. He who has not seen them in their natural place, has not yet become acquainted with their beauty, or their deformity. Not only are they in opposition to the grounds of their respective habitations, but they are so likewise between themselves, as to genus and genus; and it is worthy of remark, that, when these contrasts are established, they exist in all the parts of the two individuals. We shall speak somewhat of those of plants in the following Study, by simply glancing at that delightful and inexhaustible subject.

Those of animals are still farther extended; they are opposed not only in forms and in gestures, but in instincts; and with differences so decidedly marked, they love to associate with each other, in the same places. It is this consonance of tastes which distinguishes, as I have said, beings which are in contrast, from those which are contrary, or enemies. Thus the bee and the butterfly extract the nectar of the same flowers; the single-hoofed horse, snuffing up the wind, with his mane flowing over his graceful neck, delights to amble about airily over the same meadows on which the ponderous bull impresses his cloven foot; the dull and steady ass takes pleasure in scrambling over the rocks where the nimble and capricious goat frisks and bounds; the cat and the dog live peaceably by the same fire-side, unless where the tyranny of Man has vitiated their dispositions, by a treatment calculated to excite hatreds and jealousies between them.

Finally, contrasts exist not only in the Works of Nature in general, but in each individual in particular, and constitute, as well as consonances, the organization of bodies. If you examine one of those bodies, of whatever species it may be, you will remark in it forms absolutely opposite, and, nevertheless, consonant. It is thus that, in
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animals, the excretory organs contrast with those of nutrition. The long tails of horses and bulls are opposed to the large size of their heads and of their necks, and come in as a supplement to the motions of these anterior parts, which are too unwieldy to drive away the insects that infest them. On the contrary, the broad tail of the peacock forms a contrast with the length of the neck, and the smallness of the head, of that magnificent bird. The proportions of other animals present oppositions which are no less harmonic, nor less happily adapted to the necessities of each species*.

Harmonies,

* This Law of contrasts is, if I am not mistaken, a delicious source of observation and discovery. The women, I repeat it, always nearer to Nature than we are, employ it continually in the assortment of the colours which they use in dress, whereas no Naturalist, as far as I know, has ever observed that Nature herself acts in conformity to it, in the harmony of all her Works. Any one may find a demonstration of this, without stirring beyond his own house. For example, though there be among dogs a singular variety of colours, never was any one seen red, green, or blue : but they are, for the most part, of two opposite tints, the one clear, and the other dark, in order that in whatever part of the house they are, they may be perceptible on the furniture, with the colour of which they would frequently be confounded.

But, though the colours of those animals be taken, as well as those of most quadrupeds, from the two extreme terms of the progression of colours, that is, black and white, I do not recollect

Harmonies, consonances, progressions, and contrasts, must, therefore, be reckoned among the first elements of Nature. To these we are indebted
for

lest that I ever saw a dog completely white, or completely black. White dogs always have some spots on their skins, were it but the tip of the snout, of a dark colour. Such as are black or brown, have streaks of white, or fire-coloured specks; so that wherever they are, you can easily perceive them. I have farther remarked in them this instinct, especially in dogs of a dusky colour; when they want to lie down, they always resort to a white-coloured ground, in preference to one of any other colour. The Ladies well know this to be the case; for if there happens to be a little dog, of a dark hue, in an apartment where company is assembled, he hardly ever fails to go to repose at a Lady's foot, and on her petticoats.

The instinct, which prompts the dog to retire to rest on white stuffs, arises from the feeling which he himself has of the contrast affected by the fleas, by which he is frequently tormented. Fleas, in whatever place, resort to white-coloured objects. If you enter into a room, where there are many of those insects, if you happen to wear white stockings, these will instantly attract them. They will even crowd to a single sheet of white paper. And this is the reason why light-coloured dogs are much more infested by them than others. I have likewise observed, that wherever there are dogs of a white colour, the black and the brown always pay court to them, and give them a decided preference as play-mates, undoubtedly to get rid of the fleas at their expense. In saying this, however, I do not mean to throw an imputation of treachery on their professions of friendship. Were it not for the instinct of these minute, black, nimble, nocturnal insects, toward the white colour, it would be impossible to perceive, and to catch them.

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for the sentiments of order, of beauty, and of pleasure, which spring up in the mind, at the sight of her Works ; and from their absence arise the uneasy

The common deep-coloured fly resorts, in like manner, to white and brilliant objects ; and this accounts for the tarnishing of every thing glossy and gilded in our apartments. The flesh-fly delights, on the contrary, to settle on the livid colours of meat in a state of putridity. His blue corselet makes him easily discernible on that ground.

If we extend these contrasts farther, we shall find that, not only all sanguinivorous insects have the instinct of opposing their colours to those of the situations in which they live, but all carnivorous animals likewise ; whereas all feeble, gentle, and innoxious animals, as we have seen, are furnished with means and instincts of consonance with the ground on which they are made to inhabit. Thus has Nature willed it should be, in order that the first might be perceived by their enemies, and that the second might be enabled to escape them.

From those natural Laws might be deduced a multitude of useful and agreeable consequences, tending to the improvement of our habitations, in respect of cleanliness and conveniency. For example, in order the more readily to destroy the insects which disturb our sleep, and which are so common in Paris, it would be proper to have the alcoves, the staining, the drapery, the wooden frames of our beds, of white or faint colours ; on which insects might be easily perceived.

As to conveniency, every one must be sensible how necessary it is that the colours of different pieces of furniture should form a contrast, for the purpose of being distinguished with facility. I am frequently at a loss, for instance, to know what is become of my snuff-box, because it is black, like the table on which I
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eafy feelings of diforder, ugliness, languor, and difguft. They extend equally to all the kingdoms; and though I have limited myself, in the fequel of this Work, to an examination of their effects in the vegetable kingdom only, it is impoffible for me, however, to deny myself the pleasure of indicating them, at leaft, in the human figure. It is here that Nature has combined all the harmonic expreffions in their higheft degree of excellency. All I can do is to trace a feeble fketchn of it. To acknowledge the truth, this is not precifely the proper place, neither have I leifure to arrange more than a part of the obfervations which I have collected, on this vaft and interefting fubject. But

put it down. If Nature had not been poffeffed of more intelligence than I am, the greateft part of her Works would utterly difappear. It is very aftonifhing that Philofophers, who have purfued fo many curious reſearches reſpecting the nature of colours, ſhould never have ſuggeſted a ſyllable reſpecting their contraſts, without which nothing would be diſtinguiſhable; or rather, their forgetfulneſs is not ſurprizing: Man is inceſſantly purſuing the illuſion which eſcapes him, and neglects the uſeful truth which is lying at his foot.

The harmonies of colours have, beſides, a mighty influence upon the paſſions: but I muſt not preſume to ſay any thing with regard to this, in a Country where the Women employ them with ſuch unbounded ſway. To the Women I ſtand indebted for the firſt idea I had of ſtudyng the elements of the Laws, by which Nature herſelf ſtrives to communicate pleaſure to us.

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the little, which I am going to advance, will be sufficient to overturn the position maintained by men of but too high celebrity in the World of Science, namely, That human Beauty is arbitrary.

I will even go so far as to flatter myself with the hope, that these rude Effays may induce wise men, who love Nature, and who wish to be acquainted with her Laws, to dig into the recesses of this vast mountain of hidden treasure, in which Truth lies buried. Their multiplied illumination will conduct them, without difficulty, through the whole extent of that invaluable mine, of which, groping like a blind man, I have traced only the first superficial furrows. They will be led on from one rich vein of precious ore, to another still richer, since even I, if I may presume to say so, have been able, at the bottom of a valley, and on the sandy bed of a little rivulet, to pick up a few straggling grains of gold.

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carnome 21,
at leave 31)



